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DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

WATER-SUPPLY PAPER 299

WATER RESOURCES OF CALIFORNIA

PART II

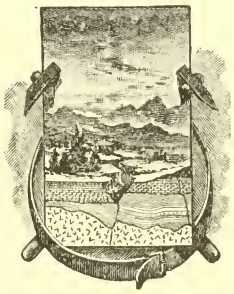
STREAM MEASUREMENTS IN SAN JOAQUIN RIVER BASIN

PREPARED UNDER THE DIRECTION OF JOHN C. HOYT

BY

H. D. McGLASHAN AND H. J. DEAN

In cooperation with the State Water Commission and the Conservation Commission of the State of California



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CONTENTS.

	Page.
Introduction	7
Cooperation and acknowledgments	8
Geography of the San Joaquin basin	10
Geologic outline	12
The rocks of the valley borders	12
Origin of the present valley surface	15
Soils	16
Precipitation	18
Drainage	18
The main stream	18
The tributaries	19
Kern and Tulare Lake basins	19
General features	19
Tulare Lake	20
Kern River	21
Tule River	23
Kaweah River	23
Kings River	24
Fresno River	24
Merced River	25
Tuolumne River	25
Stanislaus River	26
Calaveras River	26
Mokelumne and Cosumnes rivers	27
Stream flow	27
Field methods	27
Definition of terms	28
Explanation of data	29
Accuracy and reliability of field data and comparative results	30
Convenient equivalents	32
Gaging stations maintained in the San Joaquin River basin from 1878 to July 1, 1912	33
Stream gaging by the State Engineering Department of California	35
Station records	42
San Joaquin River near North Fork	42
San Joaquin River near Friant	44
San Joaquin River at Hamptonville	51
San Joaquin River at Herndon	53
San Joaquin River near Newman	66
Tulare Lake in Kings County	67
Kern River at Kernville	71
Kern River at Isabella	76
Kern River Power Co.'s canal at Kernville	79

Stream flow—Continued.
Station records—Continued.
Page.
Kern River at Rio Bravo ranch 83
Kern River near Bakersfield 85
South Fork of Kern River near Onyx 98
South Fork of Kern River near Isabella 99
Erskine Creek near Isabella 101
Caliente Creek at base of foothills, Kern County 104
Basin Creek near Havalah 105
Tejon House Creek at Tejon ranch house 109
Salt and San Emigdio creeks in Kern County 110
Poso Creek at base of foothills, Kern County 111
White Creek at base of foothills, Tulare County 113
White River near Hot Springs 114
Deer Creek at base of foothills, Tulare County 116
Deer Creek at Hot Springs 117
Tyler Creek near Hot Springs 121
Tule River at Portersville 122
Tule River near Portersville 124
Bear Creek near Springville 136
South Fork of Tule River near Success 138
Kaweah River at Wachumna Hill 139
Kaweah River near Three Rivers 141
North Fork of Kaweah River at Kaweah 153
South Fork of Kaweah River near Three Rivers 154
Kings River at Suspension Bridge 156
Kings River near Sanger 157
Kings River at Slate Point 175
Kings River at Kingsburg 177
Dinkey Creek near Ockenden 186
Big Creek near Tollhouse 188
Rush Creek near Ockenden 191
Big Creek near Shaver 192
North Fork of San Joaquin River near North Fork 194
South Fork Creek near North Fork 196
South Fork ditch near North Fork 198
Crane Valley Reservoir near North Fork 199
Whisky Creek near North Fork 201
Cascadel Creek near North Fork 203
Fresno River at base of foothills, Madera County 205
Fresno River near Knowles 207
Nelder Creek near Fresno Flats 209
North Fork of Fresno River at old Miami mill, near Sugar Pine 211
Chowchilla Creek at base of foothills, near Buchanan 212
Mariposa Creek at base of foothills, Mariposa County 213
Bear Creek at base of foothills, Merced County 215
Merced River at Yosemite 217
Merced River near Merced Falls 222
Merced River at Merced Falls 235
Merced River near Newman 237
Tenaya Creek near Yosemite 237
Yosemite Creek at Yosemite 243
South Fork of Merced River at Wawona 247
Big Creek near Wawona 248

Stream flow—Continued.
Station records—Continued. Page.
Tuolumne River at Hetch Hetchy dam site 249
Tuolumne River at Lagrange 250
Modesto canal near Lagrange 270
Turlock canal near Lagrange 281
Lagrange Water & Power Co.'s canal near Lagrange 293
Tuolumne River at Modesto, State Engineering Department station 297
Tuolumne River at Modesto, United States Geological Survey station 299
Cherry River at Eleanor trail crossing 305
Eleanor Creek at Eleanor trail crossing 306
Jawbone Creek near Tuolumne 307
Corral Creek near Groveland 309
South Fork of Tuolumne River near Groveland 310
Clavey River near Tuolumne 312
Indian Creek near Tuolumne 314
North Fork of Tuolumne River near Tuolumne 315
Hunter Creek near Tuolumne 316
Stanislaus River at Knights Ferry 318
Stanislaus & San Joaquin Water Co.'s canal near Knights Ferry 328
Stanislaus River at Oakdale (State Engineering Department station) 341
Stanislaus River at Oakdale (United States Geological Survey station) 343
Middle Fork of Stanislaus River at Sand Bar Flat, near Avery 349
Rose Creek near Jupiter 354
Knight Creek near Jupiter 355
South Fork of Stanislaus River near Confidence 357
South Fork of Stanislaus River near Columbia 358
Calaveras River at Jenny Lind 359
Calaveras River near Bellota 367
Mokelumne River at Electra 369
Mokelumne River at Lone Star mill 373
Mokelumne River near Clements 374
Mokelumne River at Lodi 384
Middle Fork of Mokelumne River at West Point 388
South Fork of Mokelumne River near Railroad Flat 389
Licking Fork of Mokelumne River near Railroad Flat 391
Dry Creek near Ione 393
Dry Creek at base of foothills, San Joaquin County 394
Cosumnes River at Michigan Bar 396
Cosumnes River below Michigan Bar 403
North Fork of Cosumnes River near Pleasant Valley 404
North Fork of Cosumnes Rives near El Dorado 406
Sly Park Creek at Park 408
Miscellaneous measurements 409
Index 423

ILLUSTRATIONS.

		Page.
PLATE I.	Relief map of northern California	10
II.	*A*, Typical gaging car; *B*, Typical gaging station, showing automatic gage	28
III.	Typical gaging stations: *A*, For bridge measurement; *B*, For wading measurement	28
IV.	Small Price current meters	28
V.	*A*, Cable station on Kings River near Red Mountain, Cal.; *B*, Falls on Bubbs Creek, tributary to Kings River	156
VI.	Falls on Roaring River, tributary to South Fork of Kings River	157
VII.	*A*, Lagrange dam from left bank of Tuolumne River at Lagrange, Cal.; *B*, Dam site near the headwaters of Tuolumne River, at Tuolumne Meadows, Cal	250

WATER RESOURCES OF CALIFORNIA.

PART II.—STREAM MEASUREMENTS IN THE SAN JOAQUIN RIVER BASIN.

By H. D. McGLASHAN and H. J. DEAN.

INTRODUCTION.

The great part which the water resources had in the development of California is evident throughout its history.

Repairs to a mill race near Georgetown, Eldorado County, in 1848, led to the discovery of gold; and the development of the gold-mining industry was due largely to the location of the deposits near the water necessary for hydraulicking. The water available for irrigation and domestic supply has been the chief factor in the development of southern California, which now has a population of more than a million people. The growth of irrigation systems in the great interior valley is bringing about its subdivision into small ranches devoted to the intensive farming which affords almost limitless opportunities to the agriculturist.

An increased water supply for the city of San Francisco is one of its greatest necessities, and more water for Los Angeles is to be brought from Owens Valley—a distance of more than 200 miles—at a cost of $23,000,000.

The many mountain streams of California afford abundant hydroelectric power, the utilization of which in manufacturing enterprises and in transportation has been made possible by the progress of electric-power transmission during the last decade; to-day California probably leads the country in the number and length of her power-transmission lines.

Information concerning the quantity of water carried by the streams has been and will continue to be an important factor in the development of these resources, for the fundamental importance of stream-flow data is now so thoroughly recognized that it is almost impossible to finance any project depending on stream flow without presenting authentic records of flow covering a period of years.

The measurement of the flow of streams in California was begun by the California State engineer in 1878, in accordance with a law requiring him "to investigate the problems of the irrigation of the

plains, the condition and capacity of the great drainage lines of the State, and the improvement of the navigation of rivers." The work was restricted to a few localities in the Sacramento and San Joaquin basins, the principal station being on the Sacramento at Collinsville.

The State engineer's office was discontinued in 1884, and practically no further stream studies were made until 1894, when engineers of the United States Geological Survey were sent into California and made a few measurements of streams in the semiarid parts of the State. The following year the Survey established a station on Sacramento River at Red Bluff and since that time it has gradually extended the work until it now has available records of flow at about 340 stations on California streams. Many records have also been collected by private parties. The first stations were located only on streams whose waters were to be used for irrigation, but records are now available on streams adapted to all uses, including navigation, domestic water supply, and power.

Information concerning this work is being published as Water-Supply Papers 295 to 300, with the following titles:

295. Gazetteer of surface waters of California, Part I, Sacramento River basin.
296. Gazetteer of surface waters of California, Part II, San Joaquin River basin.
297. Gazetteer of surface waters of California, Part III, Great Basin and Pacific coast streams.
298. Water resources of California, Part I, Stream measurements in Sacramento River basin.
299. Water resources of California, Part II, Stream measurements in San Joaquin River basin.
300. Water resources of California, Part III, Stream measurements in Great Basin and Pacific coast river basins.

The investigations of the quantity of water in the streams have been supplemented by studies of the climatic and other factors affecting stream flow, and a mass of valuable information has thus been collected affording data for all phases of hydraulic work.

Lack of time and money has prevented thorough revision of the stream-flow figures here published, but the base data are presented to enable those using the figures to verify their accuracy.

COOPERATION AND ACKNOWLEDGMENTS.

Cooperation in stream measurements between the United States Geological Survey and State of California was first provided for by the State legislature in an act approved March 16, 1903. This act covered the period from July 3, 1903, to June 30, 1905, and was in substance as follows:

The State board of examiners are hereby empowered to enter into contracts with the Director of the United States Geological Survey for the purpose of making topographic maps to the extent of twenty thousand dollars; also for the purpose of gaging streams, surveying reservoir sites and canal locations, for the conservation and utilization of the flood and storm waters of the State, to the extent of fifteen thousand dollars * * *.

Similar acts, approved March 20, 1905, and March 11, 1907, provided for the continuation of the work until June 30, 1909, with an increased biennial appropriation of $30,000 for topography and $20,000 for hydrography. The act of March 11, 1907, named the Department of Engineering of the State of California as the cooperating party.

An act placing cooperation between the State of California and the United States Geological Survey on a permanent basis was approved April 22, 1909, and provided as follows:

> The department of engineering is hereby empowered to carry on topographic surveys and investigations into matters pertaining to the water resources of the State along the lines of hydrography, hydro-economics, and the use and distribution of water for agricultural purposes, and to that end, where possible and to the best interest of the State, shall enter into contracts for cooperation with the different departments of the Federal Government in such amounts as may be an equitable and necessary division of the work. The State engineer, with the consent of the governor, may maintain and continue such investigations where there is available money not covered by cooperation contract. For the permanent maintenance of said surveys and investigations there is hereby continuously appropriated out of the general fund of the State treasury for each and every fiscal year, commencing with the date upon which this act becomes effective, the sum of thirty thousand dollars.

Of this sum $9,000 is allotted annually to investigations of water resources.

In 1911 the California Legislature provided for a State Board of Control (Water Powers), to pass on matters pertaining to the appropriation of water for power development, and for a Conservation Commission to investigate and collect information concerning forests, water, and other natural resources and their use, for the purpose of revising the laws of the State relating thereto. In 1912 the State Board of Control (Water Powers) became the State Water Commission, without change in personnel.

In the present work the State of California is triply represented: By the Department of Engineering, State of California, W. F. McClure, State engineer; by the Conservation Commission, George C. Pardee, chairman, Francis Cuttle, and J. P. Baumgartner; and by the State Water Commission, Hiram W. Johnson (governor), Charles D. Marx, chairman, S. C. Graham, Harold T. Power, and W. F. McClure. Louis R. Glavis is secretary of both commissions.

The earliest stream gaging work in the State, beginning in 1878, was carried on under the direction of William Ham. Hall, State engineer, by A. Boschke and other assistant engineers, among whom was C. E. Grunsky, who continued in charge of office computations and frequently acted as hydrographer until the State engineer's department was abolished. Work by the Geological Survey was begun in 1894, under the direction of F. H. Newell, chief hydrographer, by Arthur P. Davis and Joseph B. Lippincott. On the establishment

of the United States Reclamation Service, in 1902, Mr. Lippincott became supervising engineer for California, and the field work was continued under his direction by William B. Clapp and Samuel G. Bennett, until the separation of the Reclamation Service from the Geological Survey in 1906, when Mr. Clapp became district engineer. On Mr. Clapp's death in December, 1911, H. D. McGlashan was appointed district engineer. Numerous assistants have participated in the field work, and as their names appear in connection with the measurements which have been made they will not be repeated here. Special acknowledgment should, however, be made to W. F. Martin, who was Mr. Clapp's principal assistant from June, 1906, to November, 1909, when he was transferred to Hawaii. Many records have been collected in cooperation with private individuals, to whom credit is given in connection with the published data.

GEOGRAPHY OF THE SAN JOAQUIN BASIN.[1]

California is traversed on the east and west by two approximately parallel ranges of mountains—the Sierra Nevada and the Coast Range—which converge at Mount Shasta on the north and at Tehachapi on the south and inclose the largest body of farming land in the State, the area often spoken of as the Great Valley of California. (See Pl. I.) It is a gently sloping and practically unbroken plain, about 400 miles long and from a few miles to 80 miles wide, the average width being about 40 miles. The total area of the valley proper is 15,700 square miles, or 10,048,000 acres; including mountains and minor valleys it comprises more than 58,000 square miles. "On the east side the valley has since the beginning of Cretaceous time been bordered by the Sierra Nevada; on the west side diastrophic processes have gradually built up the barrier of the Coast Ranges, changing the depression from a gulf of the sea to a lake and from a lake to a drained valley. From the beginning of the Cretaceous period the Great Valley has been the depository of enormous masses removed by erosion from the rising land on the west, and to a less degree also of the débris from the Coast Ranges.[2]

The Great Valley itself exhibits little diversity in its physical aspect. Such differences as exist between its north and south ends are climatic, or, if physical, are directly due to climatic differences. Among local physical features due to climatic differences may be mentioned the Tulare basin, at the south end of the San Joaquin Valley, which has been caused by the aridity of the region and the consequent extensive development of alluvial fans. Two of these

[1] This section and the sections on geology and soils are taken mainly from "Preliminary report on the ground waters of San Joaquin Valley, California," by W. C. Mendenhall (Water-Supply Paper U. S. Geol. Survey No. 222).

[2] Lindgren, Waldemar, Tertiary gravels of the Sierra Nevada, California: Prof. Paper U. S. Geol. Survey No. 73, 1911, p. 15.

RELIEF MAP OF NORTHERN CALIFORNIA.

From Bulletin 207, Office of Experiment Stations, U. S. Department of Agriculture.

fans, extending from Kings River on the east and Los Gatos Creek on the west side of the valley, have coalesced in a low ridge south of which lie the Tulare Lake and Kern Lake depressions. Basins differing in character and situation but originating nevertheless in climatic conditions are the overflow basins of the Sacramento and the lower San Joaquin valleys, of which the Yolo basin may be mentioned as a type. These basins occupy the lowest portions of the flood plains just outside the ridges that form the immediate river banks.

The central valley opens to San Francisco Bay and thence to the Pacific through Carquinez Strait and the Golden Gate, and the combined waters of the Sacramento and San Joaquin systems discharge through these gateways. Other passes, like the Tehachapi, the Tejon, and Walker Pass, near the south end of San Joaquin Valley, and the Livermore Valley gateway, near Carquinez Strait, break the mountain barriers that surround the central lowland, but they are not so low nor so pronounced as the central tidal gateway. In general it may be said that the Great Valley is completely inclosed except for this opening.

The larger lobe of the central depression, extending southward from Cosumnes River and Suisun Bay, is generally known as San Joaquin Valley, although it is not all drained directly by San Joaquin River and its tributaries. The southern, more arid third of the depression, extending from Kings River delta to the Tehachapi Mountains, has no surface outlet under normal conditions, and the surface waters accumulate in the Tulare Lake depression and the Buena Vista reservoir. Originally Kern Lake received a portion of the excess from Kern River, but through the protection afforded by a restraining dike water is kept out of it except as unusual floods may break the restraining dam, and the original lake bottoms have become valuable wheat lands.

The streams that drain into the valley from the Sierra Nevada carry practically all the water that reaches it. They are in every way more important than those that enter it from the west. They have larger drainage basins, individually and collectively; they have longer courses; and they flow from higher mountains, with a much greater rainfall and a better protective covering of forest and brush; hence their discharge is many times greater and much less erratic than that of the west-side streams.

The total drainage area [1] tributary to the valley from the Sierra is 16,089 square miles, and from the Tehachapi and Coast Ranges 4,293 square miles; the area of the valley floor is 11,513 square miles. The total area of the San Joaquin basin is therefore 31,895 square miles.

[1] Hall, W. H., Physical data and statistics of California, pp. 396 et seq.

The average run-off of the principal east-side streams north of Kings River, with a combined drainage area of 7,543 square miles, is about 8,500,000 acre-feet; that of Kings, Kaweah, Tule, and Kern rivers, discharging into the Tulare basin from a drainage area comprising 5,143 square miles, is about 3,000,000 acre-feet. The total discharge into the valley from 12,686 square miles of Sierra slopes is therefore about 11,500,000 acre-feet.

The preponderance of east-side streams has given the valley floor its well-marked unsymmetrical form. The valley axis, the line of lowest depression, is throughout much nearer the western than the eastern foothills. In places it lies against the western hills, but elsewhere, as between Los Gatos and Cantua creeks, the west-side slopes are 15 or 18 miles wide—at least half as wide as those of the east side. They are also steeper than those of the east. Grades of 20 or even 40 feet to the mile are not rare, and it is unusual for the grades to be less than 6 or 8 feet to the mile. On the east side 30 feet to the mile is about the maximum gradient, 5 feet or less being perhaps the average.

These conditions are due directly to the fact that the valley floor has been built up by the alluvial material eroded by the streams from the mountains east and west of the depression. The larger and more active streams have built flatter but more extensive alluvial fans—the type that makes up the east-side slopes; the more erratic and torrential streams of smaller volume have built the steeper and less extensive fans that constitute the west-side slopes.

GEOLOGIC OUTLINE.[1]

THE ROCKS OF THE VALLEY BORDERS.

In simplest outline the geologic formations of the eastern border of the San Joaquin Valley consist of granites and metamorphic sedimentary and igneous masses of pre-Cretaceous age, which have been called the "Bedrock series," overlain at the north and south ends of the valley, in an interrupted band occupying a zone of low relief between the Sierra proper and the valley proper, by a series of Tertiary sediments, entirely unaltered and including beds as old as the Eocene, although the great body of the material seems to be Miocene or Pliocene in age. Between San Joaquin River and Portersville this zone of late sediments is missing, and the sands and gravels of the valley proper lie upon the flanks of the granite and metamorphic complex of the Sierra. Because of this hiatus the east-side Tertiary deposits are separated into two bodies, of which the northern extends from Fresno River nearly to the Cosumnes, and the southern, conveniently designated as the Bakersfield area, extends from Deer Creek to the Cañada de las Uvas.

[1] Abstract from a manuscript by H. R. Johnson, on the geology of the borders of the San Joaquin Valley.

The northern area of Tertiary rocks, which is chiefly in the Milton-Merced region, includes a lower clayey series that has been called the Ione formation; a middle series consisting of andesitic sandstone, coarse volcanic breccias, and tuffaceous beds; and an upper gravelly series that is in places auriferous. This upper series usually occurs along the mostly westerly foothills and merges at many points with the gravels and soils of the valley floor.

The southern area contains alternating beds of soft sandstone, clay, and gravel, the uppermost beds being coarse, like those of the northern area, and in some places scarcely distinguishable from the alluvium of the valley itself.

The geology of the western margin of the valley contrasts in many ways with that of the eastern margin. The oldest rocks of the Diablo Range—the easternmost of the Coast Ranges—are altered igneous and sedimentary rocks, the latter known as the Franciscan formation. They extend along the axis of the range from a point southwest of Coalinga to San Francisco Bay. Overlying them on the valley side, but not continuously, is a succession of sandstones, shales, and conglomerates of Cretaceous and oldest Tertiary (Eocene) age. These in turn are overlain by a diverse sequence, locally of great thickness and usually but not invariably present in some of its members, representing the middle and upper Tertiary. These rocks, like the older sediments beneath them, are sandstones, shales, and conglomerates, but as a rule they are less firmly indurated than the Eocene and Cretaceous rocks. They overlie the latter unconformably and contain many unconformities within themselves, with a resulting diversity in thickness and irregularity in extent of individual beds. These rocks include several bodies of siliceous shale, besides a great variety and abundance of sandstones and conglomerates. Toward the top of the section are beds that clearly represent fresh-water or subaerial deposition, undoubtedly much like that which is now taking place in Tulare Lake and in the west-side alluvial fans. As a whole the sedimentary strata dip toward the valley, although interruptions like the anticline of the Kettleman and McKittrick hills vary the prevailing monoclinal dips. In general the structures of the valley border are more complex at the south end than along the middle portion and at the north.

The valley as a whole is a great structural trough and appears to have been such a basin since a time well back in the Tertiary period. Since it assumed its general troughlike form, gradual subsidence, perhaps interrupted by periods of uplift, has continued and has been accompanied by deposition, alternating, at least along what is now its western border, with intervals of erosion. This interrupted but on the whole continuous deposition seems to have been marine during early and middle Tertiary time; but during the later Tertiary

and Pleistocene epochs, when presumably the valley had been at least roughly outlined by the growth of the Coast Ranges, fresh-water and terrestrial conditions became more and more predominant, until the relations of land and sea, of rivers and lakes, of coast line and interior, of mountain and valley, as they now exist, were gradually evolved. As these conditions developed, the ancestors of the present rivers probably brought to the salt and fresh water bodies that occupied the present site of the valley and its borders, or, in the latest phases of the development, to the land surface itself, the clays, sands, gravels, and alluvium that subsequently consolidated into the shales, sandstones, and conglomerates of the late Tertiary and Pleistocene formations, just as the present rivers are supplying the alluvium that is even now accumulating over the valley floor.

The very latest of these accumulations are the sand, silt, and gravel beds penetrated by the driller in his explorations for water throughout the valley. They are like the early folded sandstones, shales, and conglomerates exposed along the flanks of the valley, except that they are generally finer and are not yet consolidated or disturbed. The greater part or perhaps all of them accumulated as stream wash on the valley surface or in interior lakes like the present Tulare Lake, but a proportion of the older sediment that has gradually decreased accumulated in the sea or in salt bays having free connection with the sea. These very latest geologic deposits, saturated below the ground-water level by the fresh water supplied chiefly by the Sierran streams, constitute the reservoirs drawn upon by the wells, whether flowing or pumped, throughout the valley.

The chemical character of the ground waters, as well as their occurrence and accessibility, is related to geology. Where the valley alluvium is derived from the Cretaceous and Tertiary beds of the Coast Ranges, rich in gypsum and other sulphates and carbonates which are relatively easily soluble, the ground waters that percolate through it will soon dissolve large quantities of the salts. Where if, the alluvium, on the other hand, is derived from the granites and metamorphic rocks of the Sierra, whose potassium, sodium, and calcium compounds are in the form of resistant silicates, the ground waters dissolve out these constituents slowly and under all ordinary conditions remain practically free from salts.

Obviously if the sands and gravels through which the ground waters percolate were deposited under such conditions that salts were deposited with them, as in the salt water of the sea or of bays like San Francisco Bay, or in interior lakes that are saline through evaporation, as is true of Tulare Lake, then the ground waters themselves will quickly become saline, although when they leave the mountains as surface waters, before their absorption by the alluvial fans, they may be as pure natural waters as are known in the world.

ORIGIN OF THE PRESENT VALLEY SURFACE.

The lowland through the heart of California known as the Great Valley, whose origin as a depression appears, in accordance with the facts just outlined, to date well back into Tertiary time, owes its actual surface to more recent action and to more obvious agents. That surface is, in brief, a combination of the surfaces of a great number of alluvial fans, originating at the mouths of the canyons through which the tributary streams discharge from the mountains into the valley.

Each stream that enters the valley brings with it from the mountains a greater or smaller quantity of sand, gravel, or bowlders. All or a part of this burden is deposited in the valley, and the deposit constitutes the alluvial fan of that particular stream. The apex of each fan is the mouth of the stream canyon. From this apex it broadens and flattens until it coalesces at its periphery with other fans. The stream that built it usually spreads delta-wise over it, discharging through a number of diverging channels into the trough of the valley. As a rule these spreading distributaries flow upon the surface of the fan, but some of the major streams from the San Joaquin northward are incised into the valley floor in shallow trenches 100 feet or less in depth. This must be due to special conditions, such as recent change in volume of stream flow or in elevation of the land relative to the sea—conditions not yet understood.

The fans of different portions of the valley indicate by their mass and form the conditions of volume and distribution of rainfall under which they originated. The west-side fans, particularly those in the middle of the valley and near its south end, are steep and symmetrical, having forms characteristic of areas of low rainfall very irregularly distributed. The east-side fans are of much greater mass and lower slope, because the rivers that built them have a greater flow of somewhat less irregular character. The Kern River fan has grown westward against the McKittrick Hills until it has isolated the Buena Vista basin south of it. Before dams had been built, interfering with the natural conditions here, a shallow lake occupied the present site of Buena Vista reservoir and the old bed of Kern Lake, and during seasons of unusual rainfall there was overflow northward toward Tulare Lake. The basin occupied by Tulare Lake is likewise due to aridity of the valley and the consequent development of the Kings River and Los Gatos Creek fans. South of the low, broad ridge caused by the coalescing of these two fans is the Tulare basin, in which a part of the surplus waters of the streams south of it accumulate. As a consequence of the flatness of this basin and the very erratic character of the supply that reaches it, the lake fluctuates widely in area during a series of years.

Northward from the Tulare Lake basin the discharge of the spring is sufficiently great and sufficiently constant to prevent the formation

of delta dams like those formed by the Kings River and Los Gatos Creek fans, and an open channel is maintained from the San Joaquin northward to Suisun Bay.

Along the lower course of the San Joaquin conditions resemble those in the Sacramento Valley—that is, they are the conditions usual along rivers draining humid rather than arid regions. Large areas are subject to regular annual inundation during the spring floods or are protected from this inundation only by the construction of artificial levees. The greater part of the water that inundates this area is supplied by the Sacramento system, but the greatest overflow occurs when the floods appear in the two systems at the same time.

The essential fact as to the present valley surface is that it is a direct result of stream action. It has everywhere been built up by deposition from the streams or from fluctuating lakes that are themselves dependent on the streams; and it is formed of materials brought by the streams from the mountainous portions of their drainage basins, where they are eroding instead of depositing. Throughout the south end of the valley its surface is a combination of alluvial-fan surfaces. At the north end of the valley these fans, less strikingly and typically developed because of the greater precipitation there, still predominate along the valley borders, while the center of the valley is a flood plain of the usual type.

SOILS.

As the valley surface has been molded by stream action into its present form, so the soils of the valley represent deposition by the rivers of materials washed out of the mountains from which they drain. This soil is modified in various ways after the streams have deposited it—by disintegration of the rock particles where the streams have left them; by the mingling of the products of vegetal decay where vegetation is abundant, or by chemical processes in place, such as the formation of "hardpans" or the accumulation of alkalies; but the soil foundation, so to speak, reflects pretty closely the type of rock outcropping in the drainage basin of the stream on whose delta the particular soils are found.

For example, the soils of the deltas of Kern and Kings rivers are in large part of granitic derivation, because granitic rocks form the greater part of the mountain drainage basin of each of these rivers. Their coarseness and the distribution of the coarse and fine phases are, to a certain extent, matters of accident, due to the location of present or past channels of the streams across their deltas; but in steep alluvial fans the coarser and more bowldery soils occur nearer the mountains. In the fans of those east-side streams from the Merced northward, whose lower courses at least

are cut through late Tertiary formations containing a large percentage of lavas and derived products, other types of soil result.

The west-side streams, draining mountains that are practically free from granites and similar rocks but that contain soft serpentines, shales, and sandstones, deposit fragments of those rocks in their alluvial fans, and the result is a soil type entirely different from that of the east side and south end of the valley. These shale, clay, serpentine, and sandstone fragments disintegrate much more quickly than the granitic sands that contain large proportions of such resistant minerals as quartz and feldspar, and the result is the mellow, loamy soil with its fragments of siliceous shale that makes much of the west slope of the valley and is so productive whenever water can be applied to it.

Soil of another general class occurs at a few localities along the east side of the valley. This soil is not of alluvial-fan origin, brought into the valley by the streams from the surrounding mountains, but is due to the decay in place of the rocks underlying the particular area where it occurs. Soils of this class are found northeast of Fresno beyond Clovis, in some of the coves like Clark Valley, north of Reedley, and perhaps in other foothill valleys in the Portersville-Lindsay district. Some of the rolling wheat lands in a zone along the eastern border of Stanislaus and Merced counties may also be regarded as derived from the decay of rock in place rather than from inwashed alluvial-fan material, but as the rock is itself a late Tertiary sediment differing but little from the alluvial-fan material of the same area, the classification of the soils as residual rather than colluvial has no practical significance.

Another type of soil is neither more nor less than fine beach sand. This type is best developed in a zone surrounding Tulare Lake, and it represents the shore lines of that water body when it contained much more water than at present. In places this sand has been reworked by the wind—blown into inconspicuous dunes, as in the "Sand Ridge" near the Kings-Kern County line.

Finally, there are the soils of the "tule lands" and the "islands," the areas subject to overflow, particularly along the lower course of the San Joaquin and its tributaries but present, although less extensively developed, in other areas. These lands are black loams or adobes or impure peats and are very fertile when reclaimed.

The Bureau of Soils of the Department of Agriculture has made detailed surveys of certain areas in the San Joaquin Valley as the beginning of a general soil mapping of the entire valley. The sheets at present available cover areas about Stockton, Fresno, Hanford, and Bakersfield, and others are in preparation. In the text of the reports and in the maps that accompany them the soils are classified in great detail on a physical basis, and by a proper study of this classification the geologic origin of most of the soils may be traced.

PRECIPITATION.

The mean annual precipitation in the San Joaquin basin varies with elevation, latitude, and longitude. The southern part of the central valley is strictly arid, the rainfall there being less than 5 inches annually; northward along the trough of the valley the rainfall gradually increases, and near the north end the average is nearly 20 inches. The west-side slope has light rainfall, which increases with elevation up to about 5,000 feet and then decreases somewhat up to the summit. The same progressive increase from south to north that exists in the valley continues along the summit. This is well shown by the total run-off from the northern and southern Sierra, which amounts to about 11,500,000 acre-feet annually. Of this amount 3,000,000 acre-feet is derived from about 7,500 square miles by the streams south of the upper San Joaquin and 8,500,000 acre-feet from about 5,100 square miles drained by the San Joaquin and its tributaries from the northern Sierra. The precipitation occurs during the "rainy season," which begins in the late fall and ends in early spring. Snowfall is heavy in the higher mountain region and does not disappear until late in the summer.

DRAINAGE.

THE MAIN STREAM.

San Joaquin River rises in the high Sierra southeast of the Yosemite National Park, where it is formed by the junction of its Middle and South forks in the northern part of T. 6 S., R. 25 E., Mount Diablo base and meridian; it flows southwestward to the trough of San Joaquin Valley, where it takes a northwesterly course to Suisun Bay, into which it discharges about 50 miles by water from San Francisco.

The South Fork, which drains the larger area and is therefore considered the head of the main stream, rises in Martha Lake southwest of Mount Goddard, at altitude 11,007 feet, above sea level, flows northwestward about 40 miles, then turns to the west and southwest to join the Middle Fork. This fork is 44 miles long. Its principal tributaries are Evolution, Piute, Bear, and Mono creeks. The basin of the South Fork is bordered on the east by the Sierra Nevada, whose crest it touches for a distance of 40 miles. Elevations range from 4,000 feet at the junction with the Middle Fork to more than 13,000 feet at the highest summits. The tributaries drain innumerable glacial lakelets, of which Wanda, Evolution, Desolation, Italy, and Muriel lakes are more than 11,000 feet above sea level.

The important tributaries of the San Joaquin below the junction of the South and Middle forks drain parts of the west slope of the Sierra, take a course parallel to the upper San Joaquin—that is, southwest—and enter from the east. In order from south to north

these are Fresno, Chowchilla, Merced, Tuolumne, Calaveras, and Mokelumne rivers. The principal streams from the Sierra south of the upper San Joaquin are, in order from north to south, Kings, Kaweah, Tule, and Kern rivers. Kaweah, Tule, and Kern rivers are lost in the Tulare Lake depression, which, under normal conditions, sends no water to San Joaquin River, but Kings River at times discharges directly into the San Joaquin.

THE TRIBUTARIES.

KERN AND TULARE LAKE BASINS.

GENERAL FEATURES.

The Tulare Lake basin is situated near the south end of the San Joaquin Valley and embraces that part of the valley determined by the Kings River delta at the north and the Kern River delta at the south. These rivers leave the foothills and enter the valley near Fresno and Bakersfield, respectively. Strictly speaking, they are tributaries of San Joaquin River, but in reality no water from Kern River has reached the San Joaquin in recent years. Only a part of the Kings River water enters the San Joaquin.

Below the foothills the Kings River and Kern River channels roughly parallel each other in a southwesterly direction. They are about 90 miles apart, and their courses are approximately at right angles to the axis, or old trough, of the valley. During past centuries each of these streams has brought down an immense quantity of eroded material and deposited it in the valley along its course, the result of the deposition being the pronounced delta fans that extend completely across the valley as the Kings River and Kern River ridges. The delta ridge formed by Kern River extends westward to the McKittrick Hills and cuts off a small basin in the extreme south end of the San Joaquin Valley, which may be called Kern Basin. This basin contains several small lakes, of which Buena Vista reservoir is the largest and occupies the lowest depression. Kern River drains into this basin.

North of the Kern River ridge and south of the Kings River ridge is another broad but shallow depression known as the Tulare Lake basin or the "valley of the tules." Its lowest area lies in the trough of the San Joaquin Valley and for several hundred years has been covered most of the time by a shallow fresh-water lake. The lake was originally a delta swamp and has always fluctuated in depth and extent, depending on the season and the caprice of the delta rivers supplying it. Probably within the last hundred years the entire flow of Kern, Tule, and Kaweah rivers and a large part if not all of that of Kings River has entered this lake; but at the present time only the Kaweah and the Tule, south of Kings River and north of

Kern River, are wholly tributary to the Tulare basin. At high stages Kings River discharges in part into this basin, and sometimes overflow may reach it from the Kern River basin at the south.

TULARE LAKE.

Tulare Lake is a shallow body of water occupying the lowest depression of the Tulare basin. It is about 30 miles directly south of Fresno and 40 miles northwest of Bakersfield. The lake is roughly rectangular in shape, its greatest length being from northwest to southeast. In November, 1907, when its margin was carefully determined, the lake had an area of about 274 square miles, a maximum depth of 12.4 feet, an average length of 20 miles, and a width of 13.5 miles; the water's edge was 3 miles from the town of Corcoran and the water surface about 12 feet below.

C. E. Grunsky, in Water-Supply Paper 17, says:

Tulare Lake has frequently been under discussion as a source of water supply for irrigation. The following facts with reference to the fluctuations of its water surface will be of interest in connection with its availability for this purpose: In 1853, after several wet seasons, the lake was full, though probably not so high as subsequently, in 1862 or in 1868. From 1853 until 1861 there was a gradual subsidence of the low-water stage of the lake. The rate at which this occurred can not now be determined. In the fall of 1861 the water surface of the lake was at the elevation 204 feet above sea level (low water of Suisun Bay), if the testimony of residents at the lake at that time, in reference to the rise of water the following winter, can be relied upon. The unusual heavy rainfall of the winter 1861–62 caused the lake to rise to the highest known stage, 220 feet. Its area was increased from about 300 to about 800 square miles, and 300,000,000,000 cubic feet, or 6,885,000 acre-feet, of water were added to its contents. It continued to overflow at least until the spring of 1863, but then rapidly fell to about 11 or 12 feet below its highest stage, which was its condition in the fall of 1867. The inflow of water during the wet winter of 1867–68 again brought the lake nearly, if not quite, to the high-water stage of 1861–62.

The water surface fluctuated between 211 and 217 feet in the years 1872 to 1876, then receded rapidly to the lowest known stage, 192 feet, in November, 1883. From that time to this [1899] the lake has not received sufficient water to cause it to overflow. It is generally believed that the diversion of water for irrigation purposes from Kern, Tule, Kaweah, and Kings rivers has been the cause of the decrease of water volume in the lake, but this is not true. Although such diversion must produce some effect on the lake, the evidence that protracted low stages [before there was any irrigation] preceded the low stage of 1883 is conclusive. On the northeastern shore of the lake, close by the mouth of Mussel Slough, there is a group of tree stumps at an elevation of about 200 feet. These were found at the water's edge in 1882. They presented the appearance of having been broken off at a height of 3 or 4 feet above ground. They were well preserved and must have been under water for nearly 30 years succeeding the high stage of the lake of 1853. These stumps are a remnant of a grove of willow trees, 100 or more, some of which had grown to a diameter of 4 feet. It would not have been possible for these trees to attain such growth if the lake had not been at a low stage for many years in succession at some time preceding 1853. Moreover, Indian tradition is said to indicate a time when the lake was contracted to two ponds, between which a passage from the east to the west side of the valley was possible.

For 25 years preceding 1898 the lake level was steadily lowered, in part as the result of the development of irrigation in the Tulare basin, but chiefly because of the light precipitation in the tributary drainage basins. During this entire period and particularly during the several years immediately preceding 1898 the precipitation was generally below the normal. In that year the lake bed became practically dry and, after partly refilling in 1901, in 1905 it became completely dry. As the water receded, a constantly increasing area of exceedingly fertile land was uncovered. From time to time this land was leveed on the lake side and cultivated, and in the early spring of 1906 the entire lake bed was under cultivation.

On March 15, 1906, the first water of the season reached the lake bed at the mouth of Kings River and began to spread out over a large area of bottom land on which stood a crop of wheat almost matured; a few days later water from Kaweah and Tule rivers entered the lake bed, rapidly submerging an increasingly large area of wheat fields; on June 1 the water was 7 feet deep and covered about 200 square miles; on June 23 overflow water from Kern River basin cut through the sand ridge to the south and flowed into the lake, which for a few days afterward rose at the rate of 0.2 foot a day; on August 4 the water reached its greatest height for the year 1906, and the lake had an area of about 300 square miles and a maximum depth of 12.7 feet; the total rise of the lake in 1906 was 10.8 feet; after this date the lake level slowly subsided until December 9, then a rise began which continued until July, 1907, when the lake attained a maximum depth of 14 feet; since this date it has been gradually subsiding.

The lake bed resembles a large flat saucer; the flat, level area in the bottom is approximately 180 feet above mean sea level and covers about 55 square miles. The lowest point of the crest of the Kings River delta reached at the north is about 30 feet higher than the bottom of the lake. The lake basin will not overflow naturally until the lake has a maximum depth of nearly 30 feet and an area of nearly 1,000 square miles. Though classed as a tributary of the San Joaquin, the lake has sent no water to that stream since about 1876.[1]

KERN RIVER.

Kern River rises in glacial lakelets among the high peaks of the Sierra divide and on the Kings-Kern and Great Western divides. It flows directly southward about 70 miles, then southwestward to the mouth of its canyon a few miles northeast of Bakersfield, where it enters the south end of San Joaquin Valley. No water from Kern River has reached the San Joaquin in recent years. Its total length

[1] For summary of history of Tulare Lake see Water-Supply Paper U. S. Geol. Survey No. 222, p. 37.

from its source to Bakersfield is about 140 miles. The drainage area above the valley rim is 2,570 square miles.

The basin is the largest and most southerly of all the areas tributary to the San Joaquin Valley from the Sierra; it extends farther east than any of the other basins, from which it differs also in that its axis trends north and south instead of east and west; it is long and comparatively narrow and lies west of the main high Sierra divide, but east of the secondary parallel crest called the Great Western divide, which separates it from the basins of Kaweah and Tule rivers and the southern foothill streams at the west. At the north it is separated from the Kings River basin by a cross range about 15 miles long, known as the Kings-Kern divide.

Altitudes in the Kern River basin range from a few hundred feet at the mouth of the river's lower canyon to more than 14,000 feet on the headwaters. More than 50 of the peaks in the basin exceed 13,000 feet in altitude, and many of the lakes which feed the upper stream are at an altitude of 11,000 feet or more.

Mount Whitney, the highest mountain in the United States proper, towering 14,501 feet above sea level, overlooks the northern part of the Kern River basin from the east.

The principal tributary of Kern River is its South Fork. Above the point of confluence the two streams are about equal in length and drainage area and flow parellel to each other and to the marginal rims.

The basin is divided into two lesser basins by a ridge which extends northward from the junction of the South Fork with the main stream to an intersection with the Sierra divide near Trail Peak, about 12 miles south of Mount Whitney. These two basins differ greatly in topography. The eastern basin is characterized by comparatively low, flat, and irregular hills, separated by many intervening meadows, large and small; it is drained by the South Fork. The western basin is characterized by high glaciated peaks and ridges and by deep canyons; it is drained by the main stream, which flows for a great part of its length through a narrow canyon. Kern River canyon proper is about 20 miles long, 1 mile wide at the top, and 1,500 to 2,000 feet deep. It begins at Junction Meadow, 7 miles west of Mount Whitney, at an altitude of 8,000 feet, and runs due south to Kern Lake. The bottom of the canyon is several hundred feet wide and the average gradient is 100 feet to the mile. The main canyon is intersected by short cross canyons, chiefly from the west. Above the junction of Kern River and South Fork the canyons broaden out into valleys of considerable size, especially on the South Fork; below the valleys, however, the main stream again enters a rough canyon, which it follows to its entrance into San Joaquin Valley.

The South Fork of Kern River rises on the western slope of the Sierra in the western part of T. 17 S., R. 35 E., Mount Diablo base and

meridian, 15 to 20 miles south of the headwaters of the main stream, at an altitude of 10,500 feet. It flows southward about 50 miles, then westward about 20 miles to its junction with the main stream at Isabella. The basin is characterized by comparatively low, flat, and irregular hills, separated by many intervening meadows. The runoff from this part of the Kern River basin is much smaller than that of the main branch. The basin of the South Fork affords many excellent reservoir sites. The principal tributaries are Mulkey, Monache, Soda, Fish, Chimney, Kelso, and Fay creeks.

The mean annual precipitation in the Kern River basin as a whole is small, partly because of the position of the basin in the southern region of the Sierra, which receives less rainfall than the central and northern regions, and partly because it lies east of the Great Western divide, which intercepts the moisture-laden winds. In the southern part of the basin the precipitation is probably less than 10 inches annually; in the central part it may range from 10 to 17 inches. Fully 80 per cent of the total summer flow of the river at the mouth of its canyon is derived from the precipitation on the mountain area which lies within 15 miles of the source of the river.

In the foothills region of the Kern River basin the natural vegetation consists of grass and brush. At altitudes between 3,000 and 10,000 feet the soil supports timber and underbrush; at altitudes of 10,000 feet, however, the area is practically devoid of timber. The entire basin is included in national forest reserves.

TULE RIVER.

Tule River drains a small, somewhat rectangular area lying south of the Kaweah River basin, west of the Kern River basin, and north of the Deer Creek basin. Its length north and south averages about 25 miles and its width averages about 15 miles. The total drainage area above the rim of the valley is about 370 square miles.

Tule River rises at an altitude of about 9,000 feet above sea level. The main stream is formed by the junction of North and Middle forks about 1 mile above Daunt post office and about 15 miles northeast of Portersville. It takes a southwesterly course to the point where it leaves the foothills about 5 miles east of Portersville, and has a length of about 30 miles. South Fork joins the main stream about 8 miles below Daunt. The flood water passes westward through old channels in the river's alluvial fan to Tulare Lake, which it enters south of Corcoran.

KAWEAH RIVER.

Kaweah River drains an area comprising about 715 square miles, lying on the western slope of the Sierra in the northern part of Tulare County, south and west of the Kings River basin, north of the Tule River basin, and west of the upper Kern River basin.

The main stream is formed 10 or 15 miles above the head of its delta by the confluence of North, Middle, and South forks, which rise in numerous small lakes nestling among high peaks on or near the divide, at an altitude of about 12,000 feet above sea level, and its course is southwestward throughout its length. Below the foothills it divides into several distributaries which cross the delta fan and enter Tulare Lake near Corcoran. Its total length above the delta is about 45 miles.

KINGS RIVER.

Kings River drains an area comprising about 1,840 square miles, lying on the western slope of the Sierra, south of the upper San Joaquin basin and north of Kaweah and upper Kern basins.

The main stream is formed well up in the mountains by the confluence of the North, Middle, and South forks, which rise in numerous glacial lakelets nestling at the foot of glaciers and perpetual snow banks which protrude from the summits of high peaks on and near the crest of the Sierra. It flows southwestward to the mouth of its canyon, about 10 miles northeast of Sanger, and across its delta fan to the trough of San Joaquin Valley, about 6 miles west of Lemoore. From this point most of the low-water flow passes northwestward through Kings Slough to San Joaquin River about 3 miles north of Mendota, but most of the flood flow passes southward to Tulare Lake. The total length of the river from its source to the mouth of its canyon is about 85 miles. Besides the three forks and their tributaries, the other principal tributaries are Dinkey and Big creeks from the north and Mill Creek from the south.

FRESNO RIVER.

Fresno River rises on the west slope of the Sierra Nevada, in the Sierra National Forest, near the headwaters of the South Fork of Merced River and flows in general southwestward, but its waters reach the San Joaquin only during the high-water season. At other times the excess water not used for irrigation sinks in the sand of the river channel near Madera.

The principal tributaries, all small except during the rainy season, are Lewis Fork, North Fork, China, Crooks and Coarse Gold creeks in the foothills, and Willow Creek, which joins the main river below Madera.

Near the head of the river is a grove of big trees (*Sequoia gigantea*) known as the Nelder or Fresno grove.

Water is diverted from the headwater streams to feed the Madera Sugar Pine Lumber Co.'s flume, which is used to float lumber to Madera. Irrigation ditches take water at an altitude of about 4,500 feet, in the vicinity of Miami Mills, but only a small amount of water is used until the stream reaches the fertile valley land in the vicinity

of Madera. A part of the flood waters could be stored by constructing a reservoir at Windy Gap near the mouth of Crooks Creek. The river below this point has considerable fall and power development is practicable.

MERCED RIVER.

The drainage basin of Merced River lies on the western slope of the Sierra, north of the upper San Joaquin basin and south of the Tuolumne basin. It does not extend so far east as the other two basins, and it touches the Sierra divide in only one point—Mount Lyell (elevation, 13,090 feet)—which is common to the three basins. The mountainous part of the basin lies almost wholly in Mariposa County; the foothill and valley parts are in Merced County. The basin is about 65 miles long from the rim of the valley to the crest and 20 to 25 miles wide, and its total area above the valley border is about 1,200 square miles.

Merced River has its source in numerous small glacial lakes in the region about Mount Lyell and flows southwestward to its junction with the lower San Joaquin, about 5 miles northeast of Newman. It has a total length of about 135 miles, two-thirds of which is in the mountains. Its chief tributaries are Tenaya and Yosemite creeks from the north and Illilouette and Bridal Veil creeks and South Fork from the south.

TUOLUMNE RIVER.

Tuolumne River drains an area on the western slope of the Sierra, north of the Merced basin and south of the Stanislaus basin. For a distance of about 50 miles the Sierra divide separates this basin from Mono Lake and Walker River basins to the east. The length of the basin is about 105 miles, two-thirds of which is in the mountains. The total area of the mountainous part of the drainage basin is about 1,680 square miles—almost wholly in Tuolumne County.

The Tuolumne rises in numerous glacial lakes on or near the Sierra divide and flows southwestward to its junction with the San Joaquin, 10 miles west of Modesto. Its principal headwaters come from the glacier and lakes on the northern slope of Mount Lyell to the north and east of the headwaters of Merced River. The course of the river is through beautiful upland meadows in its upper part, then through a canyon nearly 80 miles long, which has been cut out of solid granite. The upper part of this canyon, for a distance of about 25 miles, is from 3,000 to 4,000 feet deep, and is known as the Grand Canyon of the Tuolumne. At the lower end of the Grand Canyon is Hetch Hetchy Valley, which is smaller than Yosemite Valley ,but in every other way resembles it very much. Finally the river passes through the lower canyon into the San Joaquin Valley, which it enters near Lagrange. Its total length is about 150 miles.

Nearly all the tributaries of Tuolumne River enter from the north. In order from east to west, the principal ones are Return, Rancheria, Falls, and Cherry creeks, Clavey River, North Fork of Tuolumne River, and Woods Creek. Eleanor Creek is tributary to Cherry Creek. South Fork of Tuolumne River is tributary to the main stream from the south. Middle Fork is tributary to South Fork.

STANISLAUS RIVER.

Stanislaus River drains a long, narrow basin lying on the western slope of the Sierra, north of the Tuolumne basin, south of the Calaveras and Mokelumne basins, and west of the Walker River basin, from which it is separated for a distance of about 25 miles by the Sierra divide. The length of the basin from the valley rim to the crest of the divide is about 75 miles; its width averages about 12 miles in the foothills and less than 25 miles near the eastern border. North Fork above and the main stream below form the boundary between Calaveras and Tuolumne counties. The total drainage area above the valley is about 950 square miles.

Stanislaus River has its source in small glacial lakes and on high peaks of the Sierra divide, and flows southwestward to its junction with the lower San Joaquin about 15 miles west of Modesto. It has a total length of about 120 miles, of which about 80 miles is in the mountains and 40 miles in the valley. The main stream is formed by the confluence of its three principal forks heading well back in the mountains. Middle Fork, the largest and most important, unites with North Fork about 12 miles north of Sonora and 30 or 35 miles above the valley rim; South Fork joins the main stream about 8 miles below the junction of North and Middle forks.

CALAVERAS RIVER.

Calaveras River is formed near San Andreas, in Calaveras County, by the confluence of its North and South forks. The South Fork, which drains the larger area and is here considered the continuation of the main stream, rises on the east slope of Harmon Peak, in the southern part of T. 2 N., R. 12 E., Mount Diablo base and meridian, at an altitude of 2,000 feet, and flows in general northwestward 13 miles to its junction with the North Fork, from which the main stream flows southwestward, uniting with the San Joaquin a few miles west of Stockton. Its total length is about 80 miles—35 miles in the valley and 45 miles in the mountains. The total drainage area above the border of the San Joaquin Valley is about 500 square miles.

The basin is almost wholly a foothill region; the highest point is 6,000 feet in altitude, but only a very small part exceeds 4,000 feet. The hills are low and separated by small irregular valleys.

In the lower foothills the vegetation consists of grass, brush, and scrubby timber, chiefly oak; the upper part of the basin supports a heavy growth of timber. The Calaveras grove of big trees (*Sequoia gigantea*) is partly in this basin and partly in the Stanislaus basin to the south.

The mean annual precipitation ranges from about 15 inches in the valley to 22 inches in the low foothills and 35 or 40 inches in the upper part of the basin; the little snow that falls in this area quickly disappears.

The river is torrential in winter and dry for a few months during the summer. It is not especially suitable for irrigation unless assisted by storage.

MOKELUMNE AND COSUMNES RIVERS.

The Mokelumne River basin lies on the western slope of the Sierra, north of the Calaveras and Stanislaus River basins and south of American River basin. Strictly speaking the area drained by Cosumnes River and several other small tributaries which enter many miles west of the valley border should be considered a part of the Mokelumne basin, but this area contributes nothing to the flow of Mokelumne River above the lower Sacramento and San Joaquin delta region. The total area of the basin above the valley rim, exclusive of that drained by the Cosumnes, is about 640 square miles.

The Mokelumne rises in glacial lakelets in Alpine County at an altitude of nearly 10,000 feet, and flows southwestward to its junction with the lower San Joaquin, about 25 miles northwest of Stockton. It has a total length of about 140 miles, of which approximately 90 miles is in the mountains. For the greater part of its course it forms a boundary between Amador County on the north and Calaveras County on the south. The principal branches are North, Middle, and South forks, which unite about 5 miles above Electra and nearly 40 miles above the rim of the valley. Bear River is tributary to North Fork from the north.

STREAM FLOW.

FIELD METHODS.

The stream-flow data which make up the greater part of this report comprise (1) records of measurements of flow and of the fluctuation of stage (or gage height) at selected points or gaging stations, and (2) estimates of daily and monthly flow computed from these records.

Gaging stations are in general located at points where development is likely to take place. At most stations the relation between the water surface and points on a vertical or inclined staff or chain gage are recorded by local observers, but at some stations variation in stage is recorded by an automatic gage. The measurements of flow

are made by the engineers of the Geological Survey by means of a current meter (Pl. IV), which is operated from a bridge, a car suspended on a cable, or a boat, or by wading, the method adopted depending on the location of the station (Pls. II and III).

By plotting the results of measurements, using the discharges and corresponding gage heights as coordinates, rating curves are drawn from which a rating table giving the flow for any gage height can be prepared. From these rating tables and the daily gage heights daily estimates of flow are computed.

More detailed description of the methods used in collecting and preparing these data for publication may be found in the introductory sections of Water-Supply Paper 271, "Surface water supply of California, 1909." [1]

DEFINITION OF TERMS.

The volume of water flowing in a stream—the "run-off" or "discharge"—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups: (1) Those which represent a rate of flow, as second-feet, gallons per minute, miner's inches, and run-off in second-feet per square mile, and (2) those which represent the actual quantity of water, as run-off in depth in inches and acre-feet. The units used in this series of reports are second-feet, second-feet per square mile, and run-off in inches and acre-feet. They may be defined as follows:

"Second-foot" is an abbreviation for cubic foot per second and is the unit for the rate of discharge of water flowing in a stream 1 foot wide, 1 foot deep, at a rate of 1 foot per second. It is generally used as a fundamental unit from which others are computed by the use of the factors given in the following table of equivalents:

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

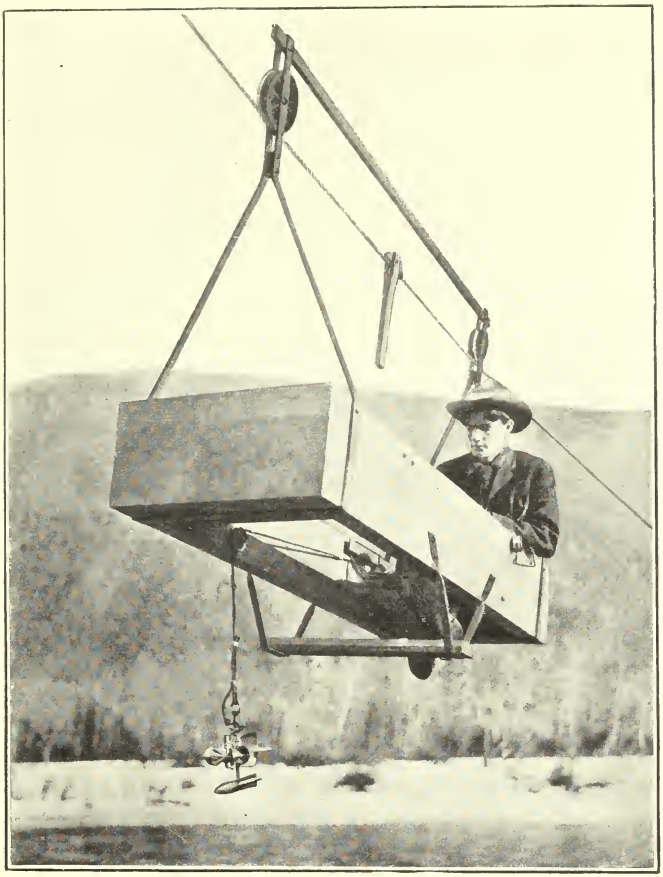
"Miner's inch" represents a rate of flow and varies in different States, as noted in the table of convenient equivalents (pp. 32–33). In California it was legalized by an act approved March 23, 1901, as one-fortieth of a second-foot. Prior to the passage of this act the common usage was one-fiftieth of a second-foot. One fiftieth of a second-foot is still used in southern California. The act reads as follows:

SECTION 1. The standard miner's inch of water shall be equivalent or equal to one and one-half cubic feet of water per minute measured through any aperture or orifice.

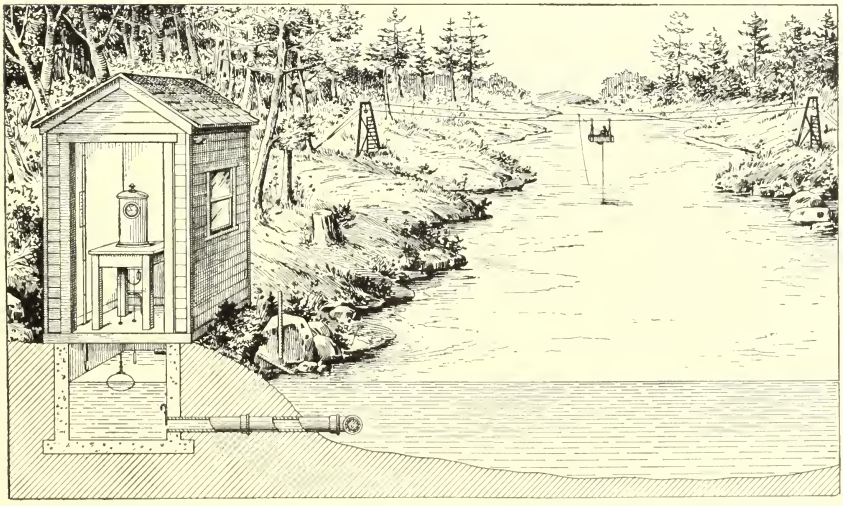
SEC. 2. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

SEC. 3. This act shall be in effect and force sixty days from and after its passage.

[1] See also Hoyt, J. C., and others, Use and care of the current meter as practiced by the United States Geological Survey: Trans. Am. Soc. Civil Eng., vol. 66, 1910, p. 70.

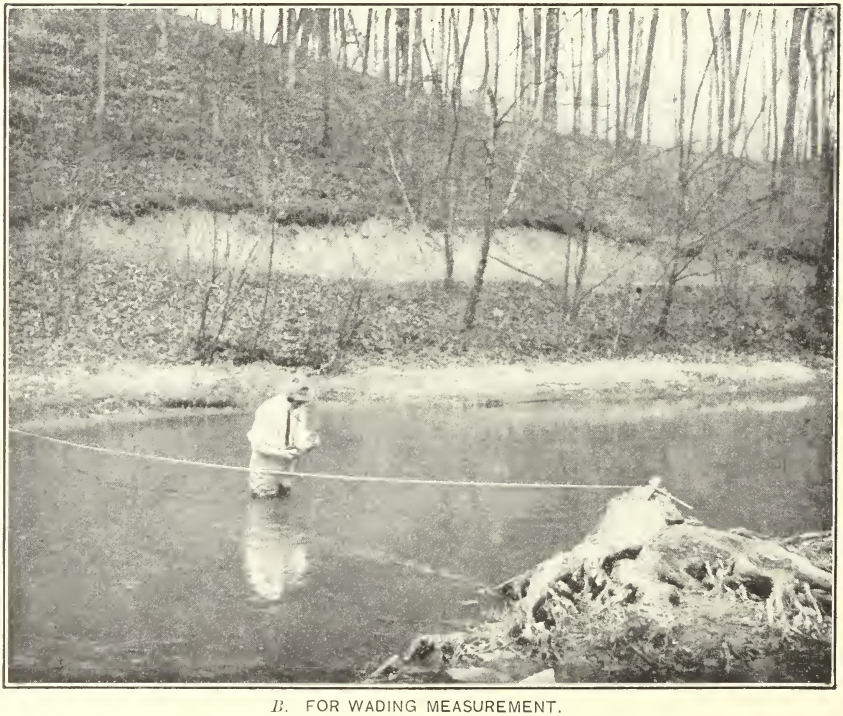


A. TYPICAL GAGING CAR.



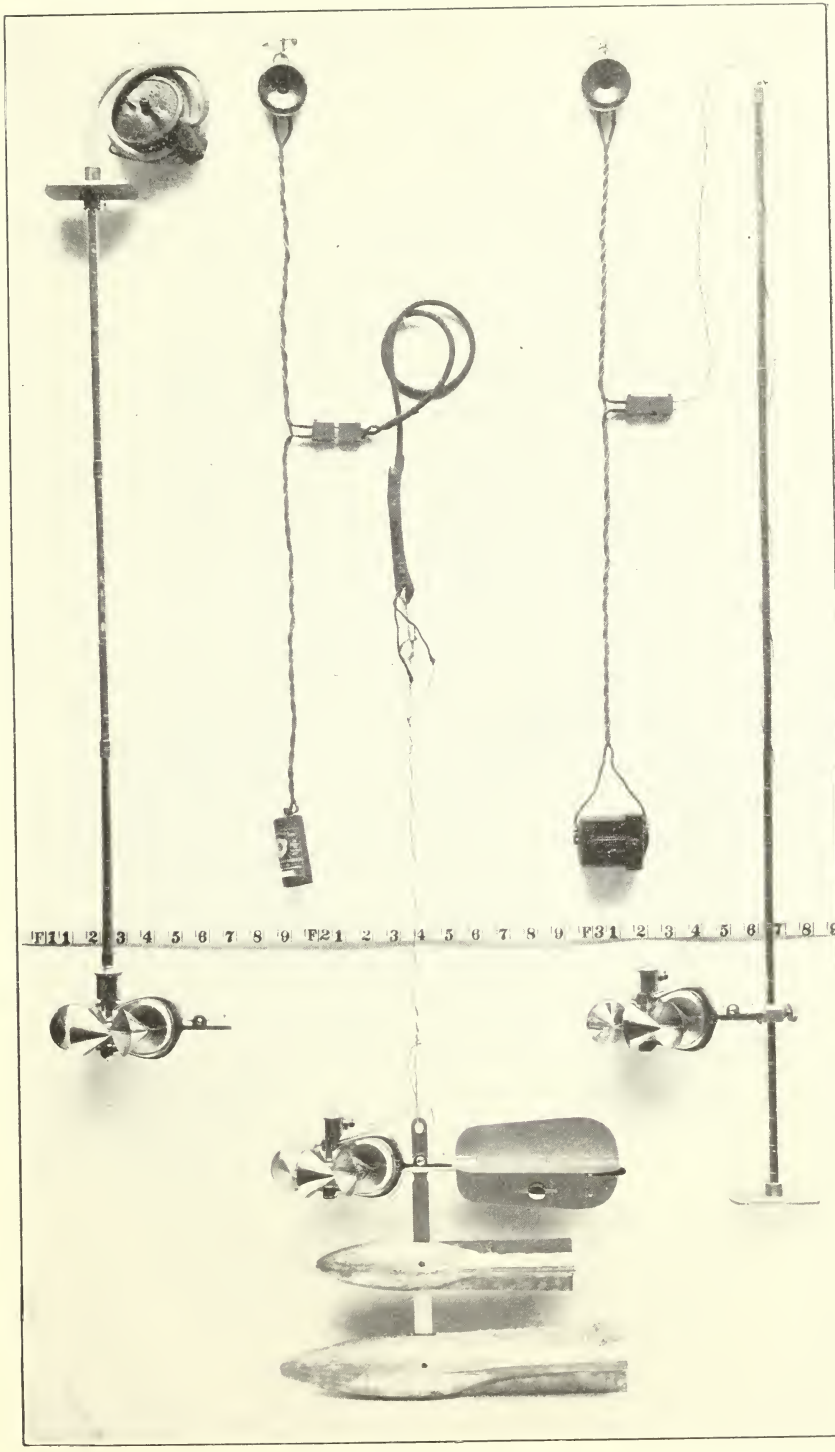
B. TYPICAL GAGING STATION SHOWING AUTOMATIC GAGE.

A. FOR BRIDGE MEASUREMENT.



B. FOR WADING MEASUREMENT.

TYPICAL GAGING STATIONS.



SMALL PRICE CURRENT METERS.

"Run-off in inches" is the depth to which the drainage area would be covered if all the water flowing from it in a given period were conserved and uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in depth in inches.

An "acre-foot" is equivalent to 43,560 cubic feet, and is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage for irrigation.

EXPLANATION OF DATA.

The order of treatment of stations in this paper is downstream. Records for all stations from the source to the mouth of the main stem of the river are presented first, and records for the tributaries in regular order from source to mouth follow, all records for each tributary basin being given before those of the next basin below.

For each regular current-meter gaging station the following data, so far as available, are given: Description of station, list of discharge measurements, table of daily gage heights, rating tables or table of daily discharges, table of monthly and yearly discharges and run-off.

In addition to statements regarding the location and installation of current-meter stations, the descriptions give information in regard to any conditions which may affect the constancy of the relation of gage height to discharge, covering such points as ice, logging, shifting channels, and backwater; also information regarding diversions which decrease the total flow at the measuring section. Statements are also made regarding the accuracy and reliability of the data.

The discharge-measurement table gives the results of the discharge measurements made during the year, including the date, name of hydrographer, gage height, and discharge in second-feet.

The table of daily gage heights records the daily fluctuations of the surface of the river as found from the mean of the gage readings taken each day. At most stations the gage is read in the morning and in the evening. The gage height given in the table represents the elevation of the surface of the water above the zero of the gage. All gage heights affected by the presence of ice in the streams, or by backwater from obstructions, are published as recorded, with suitable footnotes. The rating table is not applicable for such periods unless the proper corrections to the gage heights are known and applied. Attention is called to the fact that the zero of the gage is placed at an arbitrary datum and has no relation to zero flow or the bottom of the river. In general, the zero is located somewhat below the lowest known flow, so that readings of negative values shall not occur.

The discharge measurements and gage heights are the base data from which rating tables, daily-discharge tables, and monthly-discharge tables are computed.

The rating table gives, either directly or by interpolation, the discharge in second-feet corresponding to every stage of the river recorded during the period for which it is applicable. It is not published in this report for the years 1909–1912, but can be determined from the daily gage heights and daily discharges for the purpose of verifying the published results as follows:

First plot the discharge measurements for the current and earlier years on cross-section paper with gage heights in feet as ordinates and discharge in second-feet as abscissas. Then tabulate a number of gage heights taken from the daily gage-height table for the complete range of stage given and the corresponding discharges for the days selected from the daily-discharge table and plot the values on cross-section paper. The last points plotted will define the rating curve used and will lie among the plotted discharge measurements. After drawing the rating curve, a table can be developed by scaling off the discharge in second-feet for each tenth foot of gage height. These values should be so adjusted that the first differences shall always be increasing or constant, except for known conditions of backwater.

The table of daily discharges gives the discharges in second-feet corresponding to the observed gage heights as determined from the rating tables.

In the table of monthly discharge the column headed "Maximum" gives the mean flow, as determined from the rating table, for the day when the mean gage height was highest. As the gage height is the mean for the day, it does not indicate correctly the stage when the water surface was at crest height and the corresponding discharge was consequently larger than given in the maximum column. Likewise, in the column of "Minimum" the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" is the average flow in cubic feet for each second during the month. On this the computations for the remaining columns, which are defined on pages 28–29, are based.

ACCURACY AND RELIABILITY OF FIELD DATA AND COMPARATIVE RESULTS.

The accuracy of stream-flow data depends primarily on the natural conditions at the gaging station and on the methods and care with which the data are collected. Errors of the first group depend on the degree of permanency of channel and of permanency of the relation between discharge and stage.

Errors of the second class are due, first, to errors in observation of stage; second, to errors in measurements of flow; and third, to errors due to misinterpretation of stage and flow data.

In order to give engineers and others information regarding the probable accuracy of the computed results, footnotes are added to

the daily-discharge tables, stating the probable accuracy of the rating tables used, and an accuracy column is inserted in the monthly-discharge table. For the rating tables "well defined" indicates, in general, that the rating is probably accurate within 5 per cent; "fairly well defined," within 10 per cent; "poorly defined" or "approximate" within 15 to 25 per cent. These notes are very general and are based on the plotting of the individual measurements with reference to the mean rating curve.

The accuracy column in the monthly-discharge table does not apply to the maximum or minimum nor to any individual day, but to the monthly mean. It is based on the accuracy of the rating, the probable reliability of the observer, and knowledge of local conditions. In this column A indicates that the mean monthly flow is probably accurate within 5 per cent; B, within 10 per cent; C, within 15 per cent; D, within 25 per cent. Special conditions are covered by footnotes.

Even though the monthly means for any station may represent with a high degree of accuracy the quantity of water flowing past the gage, the figures showing discharge per square mile and depth of run-off in inches may be subject to gross errors which result from including in the measured drainage area large noncontributing districts or omitting estimates of water diverted for irrigation or other use, and they should, therefore, be considered as only approximate, particularly for periods of irrigation or of low water. For these errors it is as a rule not feasible to make adequate correction.

In general, the base data collected each year by the Survey engineers are published, not only to comply with the law, but also to afford any engineer the means of examining and adjusting to his own needs the results of the computations. The table of monthly discharge is so arranged as to give only a general idea of the flow at the station and should not be used for other than preliminary estimates. The determinations of daily discharge allow more detailed studies of the variation in flow by which the period of deficiency may be determined.

It should be borne in mind that the observations in each succeeding year may be expected to throw new light on data already collected and published, and the engineer who makes use of the figures presented in these papers should verify all ratings and make such adjustments for earlier years as may seem necessary.

CONVENIENT EQUIVALENTS.

The following is a list of convenient equivalents for use in hydraulic computations:

Table for converting discharge in second-feet per square mile into run-off in depth in inches over the area.

Discharge (second-feet per square mile).	Run-off (depth in inches).				
	1 day.	28 days.	29 days.	30 days.	31 days.
1	0.03719	1.041	1.079	1.116	1.153
2	.07438	2.083	2.157	2.231	2.306
3	.11157	3.124	3.236	3.347	3.459
4	.14876	4.165	4.314	4.463	4.612
5	.18595	5.207	5.393	5.578	5.764
6	.22314	6.248	6.471	6.694	6.917
7	.26033	7.289	7.550	7.810	8.070
8	.29752	8.331	8.628	8.926	9.223
9	.33471	9.372	9.707	10.041	10.376

NOTE.—For partial month multiply the values for one day by the number of days.

Table for converting discharge in second-feet into run-off in acre-feet.

Discharge (second-feet).	Run-off (acre-feet).				
	1 day.	28 days.	29 days.	30 days.	31 days.
1	1.983	55.54	57.52	59.50	61.49
2	3.967	111.1	115.0	119.0	123.0
3	5.950	166.6	172.6	178.5	184.5
4	7.934	222.1	230.1	238.0	246.0
5	9.917	277.7	287.6	297.5	307.4
6	11.90	333.2	345.1	357.0	368.9
7	13.88	388.8	402.6	416.5	430.4
8	15.87	444.3	460.2	476.0	491.9
9	17.85	499.8	517.7	535.5	553.4

NOTE.—For partial month multiply values for one day by the number of days.

1 second-foot equals 40 California miner's inches (law of Mar. 23, 1901).

1 second-foot equals 38.4 Cororado miner's inches.

1 second-foot equals 40 Arizona miner's inches.

1 second-foot equals 7.48 United States gallons per second; equals 448.8 gallons per minute; equals 646,317 gallons for one day.

1 second-foot for one year covers 1 square mile 1.131 feet or 13.572 inches deep.

1 second-foot for one year equals 31,536,000 cubic feet.

1 second-foot equals about 1 acre-inch per hour.

1 second-foot for one day covers 1 square mile 0.03719 inch deep.

1 second-foot for one day equals 86,400 cubic feet.

1,000,000,000 (1 United States billion) cubic feet equals 11,570 second-feet for one day.

1,000,000,000 cubic feet equals 414 second-feet for one 28-day month.

1,000,000,000 cubic feet equals 399 second-feet for one 29-day month.

1,000,000,000 cubic feet equals 386 second-feet for one 30-day month.

1,000,000,000 cubic feet equals 373 second-feet for one 31-day month.

100 California miner's inches equals 18.7 United States gallons per second.

100 California miner's inches for one day equals 4.96 acre-feet.

100 Colorado miner's inches equals 2.6 second-feet.

100 Colorado miner's inches equals 19.5 United States gallons per second.

100 Colorado miner's inches for one day equals 5.17 acre-feet.

100 United States gallons per minute equals 0.223 second-foot.

100 United States gallons per minute for one day equals 0.442 acre-foot.
1,000,000 United States gallons per day equals 1.55 second-feet.
1,000,000 United States gallons equals 3.07 acre-feet.
1,000,000 cubic feet equals 22.95 acre-feet.
1 acre-foot equals 325,850 gallons.
1 inch deep on 1 square mile equals 2,323,200 cubic feet.
1 inch deep on 1 square mile equals 0.0737 second-foot per year.
1 foot equals 0.3048 meter.
1 mile equals 1.60935 kilometers.
1 mile equals 5,280 feet.
1 acre equals 0.4047 hectare.
1 acre equals 43,560 square feet.
1 acre equals 209 feet square, nearly.
1 square mile equals 2.59 square kilometers.
1 cubic foot equals 0.0283 cubic meter.
1 cubic foot of water weighs 62.5 pounds.
1 cubic meter per minute equals 0.5886 second-foot.
1 horsepower equals 550 foot-pounds per second.
1 horsepower equals 76 kilogram-meters per second.
1 horsepower equals 746 watts.
1 horsepower equals 1 second-foot falling 8.8 feet.
1⅓ horsepower equals about 1 kilowatt.

To calculate water power quickly: $\frac{\text{Sec.-ft.} \times \text{fall in feet}}{11}$ = net horsepower on water wheel realizing 80 per cent of theoretical power.

GAGING STATIONS MAINTAINED IN THE SAN JOAQUIN RIVER BASIN FROM 1878 TO JULY 1, 1912.

The following list comprises the gaging stations that have been maintained in the San Joaquin River basin. The stations are arranged in downstream order, tributaries being indicated by indention. A dash following the date implies that the station was being maintained July 1, 1912:

San Joaquin River near Friant, 1907–.
San Joaquin River at Hamptonville, 1878–1884.
San Joaquin River at Herndon, 1870–1910.
San Joaquin River near Newman, 1912–.
Tulare Lake basin:
Tulare Lake in Kings County, 1906–.
Kern River at Isabella, 1910–.
Kern River Power Co.'s canal near Kernville, 1910–11.
Kern River at Rio Bravo ranch, 1878–1884.
Kern River near Bakersfield, 1893–.
South Fork of Kern River near Onyx, 1911–.
South Fork of Kern River near Isabella, 1910–.
Erskine Creek near Isabella, 1911–.
Caliente Creek at base of foothills, 1878–1884.
Basin Creek near Havalah, 1911–.
Tejon house creek at Tejon ranch house, 1895–96.
San Emigdio Creek at San Emigdio ranch house, 1894–95.
Poso Creek at base of foothills, 1878–1884.
White River at base of foothills, 1878–1884.

San Joaquin River basin—Continued.
Tulare Lake basin—Continued.
White River near Hot Springs, 1911–.
Deer Creek at base of foothills, 1878–1884.
Deer Creek near Hot Springs, 1910–.
Tyler Creek [1] near Hot Springs, 1911–.
Tule River at Portersville, 1878–1884.
Tule River near Portersville, 1901–.
Bear Creek near Springville, 1911–.
South Fork of Tule River near Success, 1910–
Kaweah River at Wachumna Hill, 1878–1884.
Kaweah River near Three Rivers, 1903–.
North Fork of Kaweah River at Kaweah, 1910–.
South Fork of Kaweah River near Three Rivers, 1911–.
Kings River at Suspension Bridge, 1895.
Kings River near Sanger, 1895–.
Kings River at Slate Point, 1878–1884.
Kings River at Kingsburg, 1895–1904.
North Fork of Kings River:
Dinkey Creek near Ockenden, 1910–.
Big Creek near Tollhouse, 1910–.
Rush Creek near Ockenden, 1910–.
Fresno River at base of foothills, 1878–1884.
Fresno River near Knowles, 1911–.
Nelder Creek near Fresno Flats, 1910–.
North Fork of Fresno River near Sugar Pine, 1910–.
Chowchilla Creek at base of foothills, 1878–1884.
Mariposa Creek at base of foothills, 1878–1884.
Bear Creek at base of foothills, 1878–1884.
Merced River at Yosemite, 1904–1909, 1912–.
Merced River near Merced Falls, 1901–.
Merced River at Merced Falls, 1878–1884.
Merced River near Newman, 1912–.
Tenaya Creek near Yosemite, 1904–1909, 1912–.
Yosemite Creek at Yosemite, 1904–1909, 1912–.
South Fork of Merced River near Wawona, 1910–.
Big Creek near Wawona, 1910–.
Tuolumne River at Hetch Hetchy Valley dam site, 1901.
Tuolumne River near Lagrange, 1895–.
Modesto Canal near Lagrange, 1903–.
Turlock Canal near Lagrange, 1899–.
Lagrange Water & Power Co.'s canal near Lagrange, 1907–.
Tuolumne River at Modesto, 1878–1884, 1895–1897.
Cherry Creek at Eleanor trail crossing, 1901.
Eleanor Creek at Eleanor trail crossing, 1901.
Eleanor Creek below Eleanor Lake, 1910–.
Jawbone Creek near Tuolumne, 1910–.
Corral Creek near Groveland, 1910–.
South Fork of Tuolumne River near Groveland, 1910–.
Clavey River near Tuolumne, 1910–.
Indian Creek near Tuolumne, 1910–.
North Fork of Tuolumne River near Tuolumne, 1910–.
Hunter Creek near Tuolumne, 1910–.

[1] Not named on the map.

San Joaquin River basin—Continued.
Stanislaus River at Knights Ferry, 1904–.
Stanislaus and San Joaquin Water Co.'s canal at Knights Ferry, 1899, 1904–.
Stanislaus River at Oakdale, 1878–1884.
Stanislaus River at Oakdale, 1895–1900.
Rose Creek near Jupiter, 1910–.
Knight Creek near Jupiter, 1910–.
South Fork of Stanislaus River near Confidence, 1911–.
South Fork of Stanislaus River near Columbia, 1910–.
Calaveras River at Jenny Lind, 1907–.
Calaveras River near Bellota, 1878–1884.
Mokelumne River at Electra, 1901, 1903, 1904.
Mokelumne River at Lone Star Mills, 1878–1884.
Mokelumne River near Clements, 1904–.
Mokelumne River near Lodi, 1895.
Middle Fork of Mokelumne River near West Point, 1911–.
South Fork of Mokelumne River near Railroad Flat, 1911–.
Licking Fork of Mokelumne River near Railroad Flat, 1911–.
Dry Creek near Ione, 1911–12.
Dry Creek at base of foothills, 1878–1884.
North Fork of Cosumnes River (head of Cosumnes River) near El Dorado, 1911–.
Cosumnes River at Michigan Bar, 1907–.
Cosumnes River below Michigan Bar, 1878–1884.

STREAM GAGING BY THE STATE ENGINEERING DEPARTMENT OF CALIFORNIA.

The work of the State Engineering Department of California from 1878 to 1884, carried on under the direction of William Ham. Hall, to ascertain the quantity of water available for irrigation, deserves special mention, as the results form a large part of this report.

The published data[1] comprise brief descriptions of the streams and the computations of monthly discharge for each station from November, 1878, to October, 1884. Unfortunately none of the base data—the records of discharge measurements and daily gage heights—were available when this report was prepared, so that the relative accuracy of the results[2] can not be precisely determined. The following statements are based on the descriptive matter and general discussion of methods contained in "Physical data and statistics of California" (1886), the "Report of the commissioner of public works to the governor of California" (1895), and the Twelfth Annual Report of the United States Geological Survey.

Apparently the methods followed for some of the larger streams during the earlier years were similar to those at present used by the United States Geological Survey. Gages were established and read daily and the relation of gage height to discharge was determined by

[1] Hall, W. H., Physical data and statistics of California, 1886.

[2] Daily discharge and gage-height hydrographs are published in Part II of the Twelfth Annual Report of the United States Geological Survey.

discharge measurements; or, where the range of stage was not sufficiently well covered by discharge measurements, by the use of Kutter's formula. For most of the smaller streams, however, owing to their relatively small importance and also to lack of funds, the results given are only approximate estimates based on the discharge per square mile of streams in near-by drainage areas and probably also on consideration of precipitation records, where available, and the various physical factors influencing stream flow. From November, 1882, to October, 1884, also, all records of discharge were computed by this latter method, except those of Kings River at Slate Point. The following table of run-off per square mile indicates the relative degree of accuracy of these records. Figures in bold-face type represent values determined from daily gage readings and discharge rating curves; all other figures represent incomplete records or records derived from the mean flow as estimated from run-off of near-by drainage areas.

Summary of monthly discharge, in second-feet per square mile, of streams in the San Joaquin drainage basin for 1878 to 1884.

	San Joaquin at Hamptonville.	Kern River at Rio Bravo Ranch.	Caliente Creek at base of foothills.	Poso Creek at base of foothills.	White River at base of foothills.	Deer Creek at base of foothills.	Tule River at Portersville.	Kaweah River at Wachumna Hill.	Kings River at Slate Point.	Fresno River at base of foothills.	Chowchilla Creek at base of foothills.	Mariposa Creek at base of foothills.	Bear Creek at base of foothills.	Merced River at Merced Falls.	Tuolumne River at Modesto.	Stanislaus River at Oakdale.	Calaveras River at Bellota.	Mokelumne River at Lone Star mill.	Dry Creek at base of foothills.	Cosumnes River at Live Oak Suspension Bridge.
Drainage area, square miles	1,637	2,345	423	289	90	110	437	619	1,742	272	268	122	166	1,076	1,635	1,051	491	657	283	580
1878–79.																				
November	0.20	0.17	0.00	0.00	0.00	0.00	0.30	0.25	0.17	0.00	0.00	0.00	0.00	0.06	0.04	0.04	0.00	0.05	0.00	0.05
December	.25	.15	.00	.00	.00	.00	.30	.25	.16	.00	.00	.00	.00	.06	.04	.04	.00	.05	.00	.05
January	.37	.20	.08	.08	.08	.08	.13	.40	.21	.10	.03	.00	.00	.33	.29	.50	.47	.50	.30	.50
February	.78	.25	.14	.14	.14	.14	.20	.45	.50	.30	.21	.16	.15	1.40	1.15	1.89	1.32	1.82	1.50	2.10
March	1.19	.24	.07	.07	.07	.07	.14	.65	1.13	.43	.24	.37	.34	1.95	1.70	4.30	2.17	2.08	3.00	3.00
April	2.34	.33	.25	.25	.25	.25	.27	1.40	2.72	.57	.18	.35	.32	2.90	2.73	4.09	1.38	4.67	1.50	5.40
May	3.24	.40	.18	.18	.18	.18	.24	1.25	2.92	.29	.05	.03	.00	3.10	3.09	3.90	.34	4.94	.40	5.60
June	3.89	.42	.06	.06	.06	.06	.80	.90	2.15	.06	.00	.00	.00	3.10	4.30	4.17	.20	5.53	.20	6.00
July	1.41	.23	.00	.00	.00	.00	.08	.20	.94	.00	.00	.00	.00	.90	1.21	1.51	.05	.82	.05	.90
August	.48	.11	.00	.00	.00	.00	.06	.05	.22	.00	.00	.00	.00	.16	.11	.12	.00	.25	.00	.20
September	.23	.07	.00	.00	.00	.00	.06	.05	.14	.00	.00	.00	.00	.07	.02	.02	.00	.04	.00	.04
October	.23	.08	.00	.00	.00	.00	.17	.10	.16	.00	.00	.00	.00	.07	.02	.02	.00	.03	.00	.03
Yearly mean	1.21	.22	.06	.07	.07	.06	.23	.50	.95	.14	.06	.07	.07	1.17	1.27	1.70	.49	1.72	.57	1.97
1879–80.																				
November	.25	.11	.26	.26	.26	.26	.32	.20	.23	.00	.00	.00	.00	.16	.06	.07	.00	.09	.00	.09
December	.70	.15	.50	.50	.50	.50	.62	.45	.82	.40	.05	.12	.11	.60	.55	.60	.60	.71	.70	.70
January	.50	.15	1.20	1.20	1.20	1.20	1.32	.40	.41	.02	.02	.16	.15	.36	.25	.30	.45	.43	.45	.40
February	.57	.16	2.30	2.30	2.30	2.30	2.38	.50	.60	.55	.63	.40	.36	.70	.38	.50	.80	.60	.50	.76
March	.75	.17	2.60	2.60	2.60	2.60	2.47	.75	.64	.06	.07	.20	.19	.75	.50	.60	1.25	.98	1.25	1.20
April	2.95	.66	2.90	2.90	2.90	2.90	2.95	3.80	3.00	4.00	4.72	.20	.93	3.95	4.35	5.50	8.50	6.89	8.00	7.90
May	8.02	1.14	2.00	2.00	2.00	2.00	2.38	4.50	4.01	.20	.20	.15	.14	4.50	6.31	6.89	3.00	7.66	3.00	8.80
June	11.09	1.42	.50	.50	.50	.50	1.65	6.30	5.41	.10	.10	.10	.00	4.75	8.60	7.37	.40	9.21	.40	10.50
July	4.89	.94	.05	.05	.05	.05	.80	1.20	2.11	.00	.00	.00	.00	2.55	4.65	3.10	.05	4.18	.05	4.70
August	1.06	.45	.00	.00	.00	.00	.20	.25	.66	.00	.00	.00	.00	.70	.75	.70	.02	.55	.02	.60
September	.45	.33	.00	.00	.00	.00	.10	.16	.21	.00	.00	.00	.00	.30	.08	.07	.00	.05	.00	.05
October	.26	.32	.00	.00	.00	.00	.10	.08	.13	.00	.00	.00	.00	.25	.03	.03	.00	.25	.00	.03
Yearly mean	2.62	.50	1.03	1.03	1.03	1.03	1.26	1.55	1.58	.44	.47	.11	.24	1.63	2.22	2.14	1.25	2.63	1.20	3.03

Summary of monthly discharge, in second-feet per square mile, of streams in the San Joaquin drainage basin for 1878 to 1884—Continued.

	San Joaquin at Hamptonville.	Kern River at Rio Bravo Ranch.	Caliente Creek at base of foothills.	Poso Creek at base of foothills.	White River at base of foothills.	Deer Creek at base of foothills.	Tule River at Portersville.	Kaweah River at Wachumna Hill.	Kings River at Slate Point.	Fresno River at base of foothills.	Chowchilla Creek at base of foothills.	Mariposa Creek at base of foothills.	Bear Creek at base of foothills.	Merced River at Merced Falls.	Tuolumne River at Modesto.	Stanislaus River at Oakdale.	Calaveras River at Bellota.	Mokelumne River at Lone Star mill.	Dry Creek at base of foothills.	Cosumnes River at Live Oak Suspension Bridge.
1880–81.																				
November	0.23	0.33	0.20	0.20	0.20	0.20	0.20	0.12	0.12	0.03	0.00	0.00	0.00	0.22	0.02	0.02	0.00	0.15	0.00	0.02
December	1.22	.45	.50	.50	.50	.50	.50	.60	.29	.80	.75	.75	.69	1.20	.67	.60	.50	.44	.50	.50
January	2.35	.46	.50	.50	.50	.50	.50	.85	.50	2.00	1.10	1.10	1.02	1.90	1.76	2.00	3.00	1.58	3.00	2.80
February	3.87	.76	1.00	1.00	1.00	1.00	1.00	1.25	1.39	2.00	1.40	1.40	1.29	3.20	4.12	5.00	5.50	4.64	5.50	5.30
March	1.74	.67	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.00	.31	.31	.29	1.45	1.76	2.00	2.00	1.71	2.00	1.90
April	4.89	.98	1.00	1.00	1.00	1.00	2.00	2.25	3.33	.40	.04	.04	.04	2.60	3.82	4.50	2.00	4.86	2.00	5.50
May	5.53	1.01	1.00	1.00	1.00	1.00	2.00	2.00	4.71	.20	.00	.00	.00	4.10	4.44	5.00	.40	4.60	.40	5.30
June	3.63	.81	.50	.50	.50	.50	1.00	1.60	2.88	.00	.00	.00	.00	3.10	3.19	2.60	.15	1.88	.15	2.10
July	1.87	.48	.00	.00	.00	.00	.50	.60	2.75	.00	.00	.00	.00	1.40	1.22	.91	.10	.26	.00	.30
August	.77	.27	.00	.00	.00	.00	.40	.25	.37	.00	.00	.00	.00	.35	.24	.34	.00	.15	.00	.15
September	.36	.15	.00	.00	.00	.00	.20	.07	.19	.00	.00	.00	.00	.12	.08	.13	.00	.15	.00	.15
October	.28	.14	.00	.00	.00	.00	.15	.12	.14	.00	.00	.00	.00	.07	.08	.11	.00	.10	.00	.10
Yearly mean	2.22	.54	.47	.47	.47	.47	.78	.90	1.48	.51	.30	.30	.27	1.64	1.76	1.98	1.11	1.74	1.11	2.04
1881–82.																				
November	.28	.14	.00	.00	.00	.00	.13	.20	.13	.00	.00	.00	.00	.07	.12	.14	.00	.30	.20	.30
December	.39	.15	.12	.12	.12	.12	.15	.45	.15	.10	.10	.00	.00	.30	.38	1.42	.15	.95	.90	.90
January	.19	.14	.12	.12	.12	.12	.20	.25	.22	.20	.20	.00	.00	.16	.38	.38	.70	.90	.90	.90
February	.20	.17	.15	.15	.15	.15	.25	.30	.25	.60	.61	.20	.20	.23	.35	.86	.90	.95	1.00	.90
March	.93	.26	.50	.50	.50	.50	.70	.95	.72	4.00	4.35	.60	.60	1.40	1.32	4.54	3.50	3.00	3.00	3.00
April	2.08	.50	.50	.50	.50	.50	1.50	2.25	1.82	1.00	1.00	.80	.80	2.10	2.15	3.60	3.50	4.00	2.00	4.00
May	5.40	.71	.10	.10	.10	.10	4.00	3.60	5.28	.20	1.20	.00	.00	3.40	4.55	4.91	6.00	7.50	.20	7.50
June	4.79	.56	.00	.00	.00	.00	1.50	1.50	3.68	.00	.00	.00	.00	3.10	4.91	5.00	.50	5.00	.00	5.00
July	1.78	.31	.00	.00	.00	.00	1.00	1.20	1.16	.00	.00	.00	.00	1.00	1.67	1.80	.00	1.20	.00	1.20
August	.36	.14	.00	.00	.00	.00	.30	.32	.36	.00	.00	.00	.00	.20	.35	.10	.00	.10	.00	1.00
September	.15	.14	.00	.00	.00	.00	.15	.15	.22	.00	.00	.00	.00	.12	.14	.10	.00	.09	.05	.09
October	.34	.14	.00	.00	.10	.10	.10	.14	.35	.10	.10	.10	.10	.45	.53	.45	.20	.35	.20	.40
Yearly mean	1.41	.28	.13	.13	.15	.15	.61	.95	1.20	.52	.54	.13	.14	1.08	1.42	1.94	1.29	1.98	.91	2.13

1882-83.																				
November	.30	.12	.15	.15	.15	.15	.15	.20	.27	.20	.20	.15	.15	.36	.35	.35	.30	.30	.30	.30
December	.20	.12	.05	.05	.05	.05	.15	.15	.19	.10	.10	.10	.10	.22	.20	.20	.30	.30	.30	.30
January	.20	.12	.15	.15	.15	.15	.20	.25	.18	.30	.30	.40	.40	.32	.40	.50	1.00	.60	.60	.60
February	.20	.15	.15	.15	.15	.15	.20	.20	.19	.20	.20	.20	.20	.33	.30	.40	.80	.50	.50	.50
March	.70	.30	.80	.80	.80	.80	1.00	1.00	.60	1.00	1.00	1.00	1.00	.85	.80	.80	1.50	.90	.90	.90
April	1.30	.50	.50	.50	.50	.50	1.50	1.30	1.27	.50	.50	.60	.60	2.10	2.00	2.00	2.00	3.00	1.00	3.00
May	4.50	.60	.40	.40	.40	.40	2.00	1.65	3.85	.40	.40	.30	.30	5.10	5.00	5.00	1.00	6.00	.60	6.00
June	3.80	.50	.00	.00	.00	.00	2.00	1.60	3.68	.00	.00	.00	.00	4.10	4.00	4.00	.40	4.00	.00	4.00
July	.90	.40	.00	.00	.00	.00	.80	.65	.84	.00	.00	.00	.00	1.10	1.00	1.00	.00	1.00	.00	1.00
August	.30	.20	.00	.00	.00	.00	.20	.16	.34	.00	.00	.00	.00	.35	.30	.30	.00	.40	.00	.40
September	.25	.15	.00	.00	.00	.00	.15	.12	.27	.00	.00	.00	.00	.22	.20	.20	.00	.15	.00	.15
October	.20	.12	.10	.10	.10	.10	.10	.10	.24	.00	.00	.00	.00	.17	.16	.16	.15	.15	.05	.15
Yearly mean	1.08	.27	.19	.19	.19	.19	.73	.62	1.01	.22	.22	.24	.24	1.27	1.24	1.24	.66	1.45	.35	1.42
1883-84.																				
November	.15	.09	.10	.10	.10	.10	.10	.12	.15	.00	.00	.00	.00	.15	.20	.20	.05	.20	.00	.20
December	.15	.09	.15	.15	.15	.15	.15	.12	.12	.00	.00	.00	.00	.16	.20	.20	.10	.20	.05	.20
January	.25	.15	.50	.50	.50	.50	.60	.40	.25	.10	.10	.10	.10	.22	.25	.25	.40	.25	.50	.25
February	1.50	.20	3.00	3.00	3.00	3.00	4.00	3.60	1.50	5.00	5.00	4.00	4.00	2.52	3.00	3.00	5.00	3.00	4.00	3.00
March	2.50	.40	3.00	3.00	3.00	3.00	3.00	3.70	2.07	6.00	6.00	5.50	5.50	3.55	4.00	4.00	6.00	6.00	4.00	6.00
April	2.00	.80	2.00	2.00	2.00	2.00	2.00	2.50	1.93	4.00	4.00	4.00	4.00	4.55	4.50	5.50	5.00	6.00	3.00	6.00
May	5.00	2.50	.40	.40	.40	.40	5.00	4.60	5.29	3.00	3.00	2.00	2.00	5.05	4.50	4.50	1.00	5.00	.60	5.00
June	10.00	4.00	.50	.50	.50	.50	7.00	6.90	10.12	3.00	3.00	1.00	1.00	6.05	5.00	5.00	1.00	4.50	1.00	4.00
July	8.00	2.50	.00	.00	.00	.00	6.00	5.65	7.57	1.00	1.00	.40	.40	4.05	4.00	4.00	.40	4.00	.00	4.00
August	2.00	1.00	.00	.00	.00	.00	2.00	1.60	2.05	.10	.10	.00	.00	1.05	1.00	1.00	.00	1.00	.00	1.00
September	.60	.40	.00	.00	.00	.00	.80	.80	.51	.00	.00	.00	.00	.22	.20	.20	.00	.20	.00	.20
October	.50	.20	.00	.00	.00	.00	.40	.40	.52	.00	.00	.00	.00	.16	.15	.15	.00	.15	.00	.15
Yearly mean	2.72	1.03	.80	.80	.80	.80	2.58	2.52	2.66	1.83	1.84	1.40	1.40	2.31	1.94	2.24	1.56	2.54	1.09	2.50
Average yearly	1.44	.47	.46	.45	.44	.45	1.03	1.17	1.48	.62	.60	.38	.39	1.51	1.65	1.87	1.06	2.01	.87	2.18

On the larger streams in the San Joaquin basin many measurements were made by current meter. On the smaller streams some were made with subsurface floats, but probably by far the greater number were made with surface floats well distributed across the stream, using a coefficient of 0.90, and carefully determined cross sections. These measurements were evidently made with great care and doubtless yield results quite as accurate as could be expected at the present time by the same methods. The discussions of the work indicate that the engineers in charge fully appreciated the sources of error involved in making the discharge measurements and properly allowed for them.

The determinations of the monthly discharge, however, involve large errors and the results should be used with caution unless they are fully confirmed by the later work of the survey and other special studies.

Every effort was apparently made to select good gaging sections, but there are relatively few places in California where the relation of gage height to discharge is permanent. Measurements were not made frequently enough to eliminate from the final results the errors due to changes in channel, and at most of the stations rating curves developed within a relatively short period were used in conjunction with gage heights to determine the discharge in other years. The amount of error involved in such methods depends wholly on the permanency of relation of gage height to discharge. The seriousness of errors of this sort is illustrated by the work on Kings River and San Joaquin River, presumably two of the most important stations. The gages at these stations are the same as those used in later years and both were located at points where changes in conditions of flow amount to 100 per cent or more at extreme low and medium low stages. The poor records obtained at both these points, even with frequent discharge measurements, led the Geological Survey to abandon the stations more than 10 years ago.

It should, however, be stated in this connection that "allowances for seasonal scouring and silting up of channel beds have been made" where not mentioned in the station descriptions "as also other influences * * *." So far as can be learned this allowance was frequently based on measurement of cross-sectional area without the measurement of velocity and would therefore be of doubtful value. Here again lack of data prevents adequate discussion of accuracy.[1] The station descriptions taken from "Physical data and statistics of California" indicate that the records of discharge of San Joaquin and Kings rivers were among the best collected by the State Engineering Department, and yet records collected later by that

[1] See also station descriptions for San Joaquin River at Hamptonville and Herndon and Kings River at Slate Point and Kingsburg, pp. 51, 53, 175, and 177.

department in cooperation with the United States Geological Survey at the same places clearly indicate that they were inferior even for determining approximately the stream flow.

Another possible source of error is involved in the addition of the discharge of canals taking out water above certain of the stations in order to determine the natural discharge of the streams as they leave the foothills above all diversions.

By far the most serious error arose from determining the discharge by means of estimates of run-off per square mile of near-by drainage areas. Many similar comparisons made throughout the United States show that although the total yearly discharge for several years may be approximately correct, the records of monthly discharge are liable to large errors even under the most favorable conditions, owing to the many unknown and variable conditions governing stream flow. Add to the natural uncertainties of this method of determining the discharge the known large errors existing in such records as those of Kings River at Slate Point and the San Joaquin at Hamptonville, which were used to determine the estimated discharge, and it can readily be seen that the figures should be used with caution and with liberal allowance for safety. Particularly is this true for records for the period from November, 1882, to October, 1884, when the only gage record available was the very poor one at Kingsburg, transferred to Slate Point. It is probable also that no discharge measurements were made at this station during this period. Yet this record was used to determine the discharge of the principal streams in the whole San Joaquin basin.

The above discussion of accuracy must not be considered as an adverse criticism of the earlier work. Its sole purpose is to point out the probable errors and draw a sharp line of distinction between the relative value of the earlier and the later results. Probably some of the early records equal the best records of the present day, but as no base data are available it is impossible to discriminate between the good and the poor records.

The work of the State Engineering Department of California is extremely creditable in view of the small fund available, the large territory covered, the purpose of the records, and the state of knowledge of river hydraulics at that time. The total absence of records of stream flow of any kind in the San Joaquin basin made any work valuable at that time, even the results of 1883–84 being of great importance. The later work of the engineering department and the Geological Survey, however, has made available accurate and complete records of discharge for most of the streams.

Some of the published descriptions of stations maintained by the State do not clearly indicate where the work was done. For most streams, however, the published results are intended to show the

discharge above all diversions at the point where the river issues from the foothills.

Records obtained by the State, at stations later maintained at the same location in cooperation with the Survey, are separated from the later records. Recent maps show that early estimates made of certain drainage areas were based on inaccurate maps, but no change has been made in these estimates because any correction would involve changes in many estimated values, and because the records are not important enough to warrant a change. No change has been made in the climatologic year adopted by the State Engineering Department—November to October.

Footnotes to the various tables serve to separate estimated from computed monthly means. In general maximum and minimum values are omitted from estimated means.

STATION RECORDS.

SAN JOAQUIN RIVER NEAR NORTH FORK, CAL.

This station is located a short distance below the power house of the San Joaquin Light & Power Corporation, in sec. 18, T. 9 S., R. 23 E., about 6 miles below the mouth of North Fork of San Joaquin River and 6 miles southeast of North Fork.

The gage-height record is obtained by a Watson water-stage register located about 1,000 feet below the power house.

The channel is composed of bowlders and gravel and appears permanent.

Discharge measurements are made from a car and cable near the gage.

Storage has been developed at the Crane Valley reservoir.

The records of daily discharge were furnished by the San Joaquin Light & Power Corporation.

Daily discharge, in second-feet, of San Joaquin River near North Fork, Cal., for 1910–11.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1910.							1910.						
1	3,300	6,750	12,500	2,400	1,050	425	16	7,500	9,000	3,475	1,500	500	5,380
2	3,475	6,250	10,850	2,200	950	425	17	8,300	8,800	3,150	1,450	500	675
3	3,700	2,350	8,350	1,800	850	425	18	9,550	8,350	3,300	1,500	425	500
4	4,100	6,250	7,500	1,800	850	425	19	9,550	10,850	2,950	1,450	425	375
5	4,450	5,380	6,250	1,500	775	425	20	9,550	10,500	2,950	2,000	425	375
6	4,880	5,590	6,000	1,450	775	375	21	9,550	10,850	2,800	2,400	425	375
7	5,380	7,350	5,380	1,500	775	375	22	9,550	10,200	2,650	2,200	425	375
8	5,800	8,800	4,880	1,575	675	325	23	10,500	11,250	2,650	1,800	375	375
9	6,500	9,300	3,900	1,650	675	325	24	10,850	13,500	2,400	1,650	425	375
10	6,750	9,000	5,380	1,650	675	325	25	12,000	9,950	2,650	1,575	425	375
11	6,250	9,300	6,250	1,650	600	292	26	12,500	8,000	2,800	1,500	425	375
12	5,075	9,300	6,250	1,650	600	292	27	11,550	11,250	2,950	1,300	425	325
13	4,880	9,300	5,380	1,575	600	292	28	9,000	9,300	2,950	1,300	425	325
14	6,000	9,600	4,665	1,575	500	292	29	8,300	10,500	2,800	1,200	425	325
15	6,250	9,300	4,100	1,575	500	850	30	7,350	10,850	2,400	1,300	425	325
							31	.....	12,000	.....	1,300	425	.....

Daily discharge, in second-feet, of San Joaquin River near North Fork, Cal., for 1910–11—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	325	350	315	305	14,250	1,600	8,350	7,925	8,700	13,900	3,760	1,120
2	325	350	325	265	9,400	1,740	8,400	8,000	10,500	13,600	3,400	1,020
3	295	325	325	330	6,750	1,740	8,750	8,700	12,500	14,450	3,050	950
4	295	325	460	340	7,750	1,740	7,900	10,400	14,900	15,000	3,385	925
5	295	325	365	330	5,700	2,120	7,900	13,050	16,550	15,250	3,500	885
6	285	325	395	335	4,850	6,075	8,350	12,300	19,150	15,500	3,200	845
7	285	310	425	340	4,250	4,550	8,085	8,900	15,700	15,750	3,090	750
8	275	310	425	325	3,750	3,980	7,400	9,850	15,000	14,980	3,000	710
9	275	310	425	340	3,150	3,875	7,200	10,225	15,500	12,800	2,800	665
10	295	310	415	3,485	2,925	13,000	6,950	9,500	18,000	13,300	2,600	630
11	325	295	1,900	940	2,800	6,630	6,100	9,900	21,000	12,000	2,400	610
12	775	295	960	640	3,400	9,700	5,500	10,900	22,550	12,800	2,225	600
13	850	310	675	1,070	3,275	6,650	5,250	9,900	23,850	12,850	2,025	565
14	500	350	550	1,060	3,475	5,295	5,000	9,875	22,000	12,825	1,950	540
15	500	525	455	2,980	2,525	4,960	4,960	8,400	21,000	13,900	1,800	500
16	550	375	455	1,170	2,200	4,500	5,250	7,500	21,900	12,840	1,740	490
17	600	350	400	880	2,000	4,320	5,600	7,750	22,500	14,000	1,660	490
18	550	350	355	830	1,900	4,230	6,250	8,200	24,150	13,600	1,670	490
19	675	400	390	780	1,900	4,500	7,525	10,350	22,850	11,490	1,660	490
20	550	350	425	715	1,875	4,560	7,740	11,650	21,200	10,350	1,525	465
21	550	350	400	2,245	2,200	4,500	7,600	13,100	21,800	8,400	1,480	460
22	550	375	385	1,670	1,900	4,500	7,960	15,200	17,950	7,050	1,450	475
23	500	375	425	1,340	1,800	4,560	8,850	18,000	15,700	6,350	1,380	1,600
24	500	350	425	1,630	1,800	4,500	12,500	16,400	13,000	6,500	1,330	1,120
25	500	375	400	8,400	1,725	5,120	10,450	12,800	11,650	5,900	1,295	820
26	425	400	380	3,740	1,600	5,010	11,100	10,050	14,650	5,025	1,275	700
27	425	350	310	2,400	1,600	5,290	12,200	10,500	17,250	4,500	1,240	580
28	425	325	315	1,660	1,575	5,295	7,960	11,450	17,500	4,250	1,240	520
29	375	350	300	12,500	.....	5,600	7,200	11,350	16,000	4,000	1,240	490
30	375	350	320	30,000	.....	6,640	7,200	10,250	14,250	3,750	1,180	550
31	375	.....	325	55,000	.....	7,510	.....	9,200	.....	3,730	1,180	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	815	350	325	11	475	650	335	21	355	380	320
2	720	345	325	12	450	350	335	22	355	600	315
3	600	345	335	13	435	340	330	23	350	675	315
4	570	335	340	14	425	415	330	24	350	460	320
5	530	330	340	15	405	420	330	25	350	420	320
6	490	325	355	16	405	415	330	26	350	390	305
7	500	320	355	17	375	410	330	27	350	370	295
8	470	320	355	18	375	380	330	28	350	355	310
9	465	320	340	19	365	365	330	29	350	340	330
10	480	355	335	20	355	390	330	30	360	330	330
								31	355	.....	315

Monthly discharge of San Joaquin River near North Fork, Cal., for 1910–11.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910.				
April	12,500	3,300	7,410	441,000
May	13,500	2,350	9,000	553,000
June	12,500	2,400	4,680	278,000
July	2,400	1,200	1,640	101,000
August	1,050	375	573	35,200
September	5,380	292	557	33,100
The period				1,440,000
1910–11.				
October	850	275	446	27,400
November	525	295	348	20,700
December	1,900	300	465	28,600
January	55,000	265	4,450	274,000
February	14,200	1,580	3,650	203,000
March	13,000	1,600	4,980	306,000
April	12,500	4,960	7,720	459,000
May	18,000	7,500	10,700	658,000
June	24,200	8,700	17,600	1,050,000
July	15,800	3,730	10,700	658,000
August	3,760	1,180	2,090	129,000
September	1,600	460	702	41,800
The year	55,000	265	5,320	3,860,000
1911.				
October	815	350	438	26,900
November	675	320	393	23,400
December	355	295	329	20,200

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

SAN JOAQUIN RIVER NEAR FRIANT, CAL.[1]

This station, which is located in the SE. ¼ sec. 34, T. 10 S., R. 21 E., at the Fort Miller ranch house, about 4 miles above the town of Friant, was established October 18, 1907.

No important tributaries enter near the station. Some storage and power are developed above the station and the entire flow of the stream is controlled by existing water rights, involving all irrigable lands tributary to San Joaquin River.

The staff gage is in two sections on the left bank; no change has been made in the gage datum since the station was established.

Discharge measurements are made from a cable near the gage.

Conditions for obtaining accurate discharge data are fair. At low stages the current is very sluggish, but at such times check measurements can be made from the bridge at Friant. The channel is subject to slight changes which may somewhat affect the accuracy.

The record may be considered excellent.

[1] Town formerly known as Pollasky.

Discharge measurements of San Joaquin River near Friant, Cal., 1906–1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
1906.			
Nov. 21 [a]	.....	.....	333
1907.			
Oct. 1 [a]	Clapp and Hardy..	.....	508
21	W. V. Hardy.....	3.80	541
1908.			
Feb. 27	W. F. Martin.....	4.50	1,240
May 4	W. A. Lamb.....	6.65	3,710
June 13	W. F. Martin.....	6.98	4,000
July 30	W. V. Hardy.....	4.85	1,600
Aug. 20	.....do.....	4.08	710
21	.....do.....	4.05	638
22	.....do.....	4.05	635
Sept. 5	.....do.....	3.75	419
Oct. 16	.....do.....	3.54	308
Dec. 7	W. F. Martin.....	3.70	388
1909.			
Feb. 18	W. F. Martin.....	6.41	3,380
May 16	.....do.....	9.18	8,200
June 4	.....do.....	13.78	22,300
18	W. V. Hardy.....	9.60	9,360
July 15	.....do.....	7.60	5,530
30	.....do.....	5.10	1,820
1909.			
Aug. 29	W. V. Hardy.....	4.18	865
Nov. 1	.....do.....	3.47	319
1910.			
Feb. 7	J. E. Stewart.....	4.78	1,480
Apr. 4	.....do.....	6.36	3,640
May 14	.....do.....	8.74	7,540
30	.....do.....	9.52	9,750
July 14	W. V. Hardy.....	4.85	1,520
19	.....do.....	5.32	2,150
Aug. 24	J. E. Stewart.....	3.78	529
Sept. 28	.....do.....	3.45	342
1911.			
Feb. 21	J. E. Stewart.....	5.35	2,130
May 15	.....do.....	8.56	7,390
25	H. J. Tompkins....	9.65	10,800
June 7	.....do.....	10.90	12,100
11	W. V. Hardy.....	12.70	18,600
15	.....do.....	12.90	19,000
Sept. 14	J. E. Stewart.....	3.82	625
1912.			
Apr. 19	J. E. Stewart.....	4.57	1,280
June 1	.....do.....	9.98	10,100
July 16	.....do.....	4.70	1,470

[a] Measurements made from bridge at Friant, Cal.

Daily gage height, in feet, of San Joaquin River near Friant, Cal., for 1907–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907–8.												
1	.....	4.1	3.5	4.15	4.2	5.45	4.8	8.6	6.05	5.6	5.0	3.75
2	.....	4.1	3.5	4.1	5.0	4.6	4.75	8.3	6.0	5.6	5.3	3.7
3	.....	4.0	3.5	4.1	4.8	4.6	4.7	7.8	5.8	5.7	5.2	3.7
4	.....	4.0	3.5	4.1	4.8	4.55	4.9	7.1	5.5	5.7	6.3	3.7
5	.....	3.85	3.55	4.1	4.6	4.4	5.2	6.4	5.6	5.75	6.0	3.75
6	.....	3.85	3.75	4.1	4.4	4.55	5.2	6.8	5.8	5.9	5.2	3.8
7	.....	3.85	4.5	4.05	4.3	4.55	5.2	7.8	5.85	5.7	5.0	3.9
8	.....	3.85	3.95	4.0	4.2	4.55	5.0	6.8	5.95	5.5	4.9	4.1
9	.....	3.85	4.0	4.0	4.15	4.55	5.1	6.3	6.4	5.5	4.7	4.2
10	.....	3.8	4.2	4.0	4.15	4.55	5.0	5.9	6.85	5.2	4.8	4.05
11	.....	3.8	5.4	4.0	4.2	4.6	5.7	5.3	6.85	5.6	4.8	4.0
12	.....	3.75	4.25	4.0	4.2	4.6	6.1	5.8	6.7	5.35	4.55	4.35
13	.....	3.75	4.2	4.0	4.2	4.6	6.6	5.6	6.6	5.45	4.5	4.15
14	.....	3.7	4.15	4.2	4.2	5.0	7.3	5.8	6.7	5.35	4.35	4.0
15	.....	3.7	4.1	4.4	4.2	5.0	6.8	5.9	6.65	5.1	4.35	3.95
16	.....	3.7	4.1	4.45	4.15	5.0	6.7	5.85	6.5	4.9	4.3	3.9
17	.....	3.7	4.0	4.25	4.25	5.25	6.5	5.55	6.45	4.8	4.15	3.9
18	3.8	3.65	3.9	4.15	4.2	6.0	6.8	5.6	6.0	4.8	4.15	4.0
19	3.8	3.65	3.9	4.05	4.2	6.0	7.4	5.65	5.9	4.8	4.1	4.0
20	3.8	3.6	3.9	4.05	4.2	5.1	7.8	5.95	5.9	4.8	4.05	4.05
21	3.8	3.6	3.9	4.05	4.25	6.0	7.8	5.75	5.75	4.8	4.05	4.05
22	3.8	3.65	3.85	4.1	4.2	5.9	6.9	6.1	5.7	4.8	4.05	3.95
23	3.9	3.65	3.85	4.05	4.2	6.0	6.6	6.2	5.65	4.8	4.05	3.9
24	3.9	3.6	3.85	4.1	4.2	6.0	6.3	7.1	5.5	4.8	4.0	4.2
25	4.0	3.6	3.85	4.6	4.2	5.85	6.2	6.95	5.65	4.8	3.95	4.5
26	3.95	3.6	3.9	4.2	4.2	5.7	6.4	7.0	5.85	4.75	3.95	4.2
27	4.1	3.6	3.9	5.15	4.2	6.0	7.4	6.8	5.85	4.75	3.9	4.1
28	4.3	3.6	3.95	4.8	4.2	6.0	8.2	6.95	5.65	4.7	3.9	4.0
29	4.3	3.6	4.1	4.4	5.5	5.3	8.5	7.2	5.6	4.9	3.85	3.9
30	4.2	3.6	4.5	4.2	.....	5.1	8.6	7.1	5.65	4.9	3.8	3.8
31	4.2	.....	4.3	4.2	.....	5.0	.....	6.5	.....	5.0	3.8	.....
1908–9.												
1	3.8	3.65	3.5	3.6	5.3	5.15	5.45	10.3	12.2	9.9	5.1	4.4
2	3.75	3.6	3.55	3.6	5.05	5.2	5.85	10.65	12.9	10.35	5.05	4.45
3	3.7	3.6	3.6	3.6	5.15	5.3	6.25	10.95	13.5	11.05	5.05	4.3
4	3.65	3.55	3.8	3.7	5.6	6.35	6.6	11.15	13.9	.....	5.0	4.15
5	3.6	3.55	3.7	3.7	5.25	6.25	6.35	11.2	13.65	.....	4.9	4.05
6	3.65	3.55	3.7	3.7	5.45	5.8	6.0	11.25	13.0	8.35	5.0	4.05
7	3.7	3.5	3.7	4.75	5.45	5.65	6.0	11.5	12.2	7.35	4.9	4.15
8	3.7	3.5	3.6	4.15	6.0	5.55	6.3	12.0	11.7	7.1	4.85	4.05
9	3.65	3.55	3.65	5.25	5.5	5.45	6.5	11.2	11.1	7.05	4.85	4.0
10	3.6	3.55	3.65	4.95	6.4	5.3	7.2	10.5	11.05	7.05	4.7	4.0

Daily gage height, in feet, of San Joaquin River near Friant, Cal., for 1907–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July	Aug.	Sept.
1908–9.												
11	3.55	3.5	3.65	4.2	8.4	5.2	6.8	10.15	11.3	7.45	4.65	4.0
12	3.55	3.5	3.6	4.1	10.8	5.1	6.5	9.2	11.05	8.35	4.55	4.0
13	3.55	3.5	3.55	8.5	9.25	5.05	7.35	9.0	11.25	8.9	4.6	3.9
14	3.55	3.5	3.5	15.0	7.45	5.15	7.8	8.6	11.35	8.25	4.6	3.85
15	3.55	3.5	3.5	12.0	6.45	5.25	8.35	9.25	11.6	7.45	4.45	3.8
16	3.55	3.45	3.6	8.0	6.65	5.45	9.35	9.2	11.1	7.3	4.4	3.8
17	4.0	3.45	3.5	7.15	6.45	5.5	9.5	9.25	10.1	7.3	4.4	3.75
18	3.85	3.45	3.5	6.4	6.45	5.5	9.55	9.4	9.6	6.9	4.45	3.7
19	3.8	3.45	3.5	6.0	6.05	5.5	9.3	9.55	9.1	6.3	4.55	3.7
20	3.75	3.45	3.5	5.7	5.85	5.3	9.7	9.4	8.9	5.95	4.65	3.7
21	3.75	3.45	3.5	12.8	6.2	5.5	8.8	10.25	9.55	5.9	4.55	3.7
22	3.65	3.45	3.55	11.15	5.65	5.5	7.85	9.45	10.1	5.8	4.55	3.7
23	3.6	3.55	3.6	7.15	5.45	5.65	7.4	8.85	10.85	5.95	4.6	3.7
24	3.7	3.6	3.55	6.85	5.4	5.45	7.8	8.25	11.5	6.1	4.5	3.65
25	3.75	3.65	3.5	6.65	5.3	5.15	8.0	9.0	11.2	6.15	4.4	3.6
26	3.75	3.65	1.5	6.45	5.2	5.3	9.45	9.85	10.8	5.95	4.3	3.6
27	3.75	3.55	3.5	6.55	5.15	5.3	9.85	10.55	10.5	5.8	4.2	3.6
28	3.7	3.55	3.5	5.95	5.15	5.15	9.75	10.2	10.6	5.35	4.3	3.6
29	3.7	3.55	3.5	5.6	.....	5.3	9.25	9.8	9.8	5.3	4.3	3.6
30	3.65	3.5	3.55	5.5	.....	5.7	9.7	9.0	10.05	5.2	4.25	3.5
31	3.65	.....	3.55	5.4	.....	5.35	.....	11.0	.....	5.1	4.4	.....
1909–10.												
1	3.5	3.45	4.5	10.3	5.1	4.9	5.8	7.85	9.9	5.3	4.35	3.65
2	3.7	3.5	6.0	9.4	5.1	5.25	5.9	7.8	9.9	5.3	4.3	3.6
3	3.8	3.45	5.7	7.1	4.95	5.45	6.05	8.2	8.85	5.2	4.2	3.6
4	3.9	3.5	4.7	6.5	4.95	5.95	6.2	7.55	8.3	5.1	4.2	3.65
5	3.8	3.5	4.5	6.3	4.9	5.95	6.8	7.05	8.1	4.9	4.15	3.6
6	3.7	3.5	4.5	6.0	4.85	6.0	6.5	7.2	7.0	4.7	4.1	3.6
7	3.7	3.5	4.7	5.7	4.8	6.2	6.75	7.55	6.8	4.75	4.05	3.55
8	3.75	3.55	5.3	5.5	4.9	6.2	7.1	8.7	6.6	4.9	4.05	3.5
9	3.8	3.55	5.7	5.35	4.9	6.25	7.55	9.0	6.5	5.0	4.0	3.5
10	3.7	4.1	15.0	5.25	4.8	6.4	7.75	9.0	6.65	5.05	3.95	3.45
11	3.7	3.85	8.7	5.15	4.7	6.25	7.45	9.05	6.8	4.95	3.95	3.45
12	3.65	3.85	5.3	4.95	4.8	6.4	7.0	9.25	7.0	5.05	3.95	3.4
13	3.6	3.85	5.15	4.95	4.85	6.5	6.8	9.2	7.0	5.0	3.9	3.4
14	3.6	4.0	5.1	5.0	4.9	6.45	7.4	8.95	6.8	4.9	3.85	3.5
15	3.55	3.95	4.95	5.2	4.9	6.25	7.7	9.45	6.45	4.85	3.8	4.45
16	3.55	3.9	4.8	8.5	4.9	5.85	8.0	9.35	5.9	4.8	3.8	4.5
17	3.55	3.8	4.65	6.2	4.85	5.7	8.6	8.85	5.95	4.7	3.8	5.0
18	3.5	3.9	4.55	5.7	4.9	6.0	8.8	8.35	5.85	5.2	3.8	8.0
19	3.5	3.95	4.5	5.5	4.9	6.6	9.15	8.7	5.8	5.3	3.8	7.85
20	3.5	3.95	4.5	5.35	4.8	7.05	9.4	8.9	5.75	5.5	3.75	3.95
21	3.5	4.2	4.5	5.25	4.7	6.75	8.9	8.8	5.7	5.15	3.75	3.65
22	3.5	5.5	4.4	5.25	4.7	6.7	9.15	9.2	5.6	5.05	3.75	3.6
23	3.5	4.6	4.4	5.55	4.7	6.45	9.3	9.2	5.5	4.85	3.9	3.6
24	3.45	4.55	4.35	5.8	4.7	6.2	9.7	9.6	5.5	4.7	3.85	3.6
25	3.45	4.5	4.3	5.85	4.7	6.0	9.75	9.2	5.6	4.6	3.85	3.55
26	3.45	6.0	4.3	5.55	4.8	5.7	10.3	8.5	5.5	4.55	3.8	3.55
27	3.45	5.0	4.25	5.35	4.85	5.7	9.6	8.8	5.6	4.5	3.8	3.5
28	3.5	4.5	4.2	5.25	4.85	5.65	8.85	9.6	5.5	4.5	3.8	3.5
29	3.5	4.5	4.2	5.25	.....	5.5	8.4	9.6	5.5	4.55	3.75	3.45
30	3.5	4.5	10.1	5.25	.....	5.5	8.15	9.5	5.5	4.4	3.7	3.45
31	3.5	.....	15.3	5.2	.....	5.55	.....	9.6	.....	4.4	3.7	.....
1910–11.												
1	.....	3.65	3.45	3.48	11.6	4.9	8.8	8.22	8.65	10.85	6.2	4.34
2	.....	3.55	3.45	3.4	9.4	5.5	8.9	8.5	9.4	9.8	6.1	4.3
3	.....	3.55	3.5	3.32	8.1	5.4	9.0	8.8	10.0	10.2	5.95	4.25
4	.....	3.5	3.6	3.48	9.14	9.25	8.5	9.6	11.2	10.3	5.8	4.2
5	3.5	3.5	3.6	3.48	8.6	7.5	8.8	10.5	11.5	11.0	5.7	4.18
6	3.5	3.5	3.6	3.48	7.12	6.7	10.4	9.25	12.0	11.2	5.73	4.1
7	3.5	3.5	3.6	3.48	6.7	6.46	8.75	8.85	11.4	13.0	5.7	4.05
8	3.5	3.5	3.7	3.48	6.34	12.8	8.2	9.1	11.4	11.26	5.6	4.0
9	3.5	3.5	3.75	3.48	6.04	8.76	8.3	9.3	11.6	11.2	5.5	3.98
10	3.5	3.45	3.7	7.0	5.8	11.12	8.2	9.1	12.0	10.0	5.4	3.95
11	3.5	3.45	3.75	4.51	5.65	8.6	7.7	9.2	12.9	9.0	5.3	3.91
12	4.1	3.4	4.75	4.05	6.32	7.67	7.4	9.5	13.08	9.95	5.24	3.9
13	3.7	3.5	4.5	4.15	6.75	7.2	7.2	9.2	14.0	10.5	5.1	3.9
14	3.8	3.9	3.9	4.68	6.22	7.0	7.0	9.35	13.25	10.6	5.0	3.85
15	3.8	3.8	3.9	4.86	5.8	6.8	7.0	8.6	12.9	10.5	5.0	3.8

Daily gage height, in feet, of San Joaquin River near Friant, Cal., for 1907–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
16	3.85	3.6	3.8	4.7	5.38	6.6	7.2	8.15	13.55	10.6	4.92	3.8
17	3.95	3.6	3.8	4.25	5.4	6.8	7.4	8.2	13.45	10.6	4.9	3.8
18	3.9	3.6	3.7	4.16	5.21	6.85	8.4	9.0	13.2	11.0	4.97	3.8
19	4.0	3.6	3.7	4.15	5.18	6.85	8.4	9.4	13.2	10.0	4.92	3.76
20	3.95	3.6	3.7	4.08	5.12	6.8	8.35	9.9	13.1	9.4	4.87	3.75
21	3.85	3.6	3.7	4.2	5.36	6.85	8.5	10.4	13.0	8.9	4.85	3.75
22	3.8	3.5	3.65	5.0	5.08	6.65	9.0	12.0	12.1	8.1	4.75	3.75
23	3.8	3.6	3.65	4.55	5.02	7.0	9.45	11.5	11.45	7.7	4.65	4.5
24	3.8	3.6	3.7	4.7	5.08	7.15	9.5	10.55	10.35	8.1	4.55	4.3
25	3.75	3.7	3.7	10.05	4.98	7.1	9.68	9.45	9.7	7.6	4.5	4.1
26	3.7	3.6	3.65	6.9	4.9	7.15	9.75	9.8	10.5	7.7	4.5	4.0
27	3.65	3.6	3.6	5.4	4.9	7.25	9.2	9.8	11.5	7.33	4.45	3.9
28	3.6	3.45	3.4	5.0	4.9	7.44	8.5	9.6	11.5	6.7	4.4	3.7
29	3.6	3.45	3.5	8.7	.....	7.7	8.1	9.47	11.2	6.55	4.4	3.7
30	3.55	3.45	3.5	16.1	.....	8.1	8.1	9.35	10.85	6.5	4.35	.....
31	3.55	.....	3.6	18.0	.....	8.4	.....	9.0	.....	6.4	4.35	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	4.70	3.60	3.60	3.55	3.8	3.6	4.1	4.8	9.8
2	4.10	3.60	3.65	3.6	3.75	3.6	4.1	4.9	10.4
3	3.90	3.60	3.60	3.55	3.75	3.6	4.25	5.0	10.9
4	3.80	3.60	3.60	3.55	3.75	3.65	4.4	5.0	11.0
5	3.80	3.58	3.60	3.55	3.7	4.0	4.5	5.0	11.7
6	3.80	3.55	3.60	3.6	3.7	6.0	4.35	5.0	10.7
7	3.90	3.55	3.60	3.6	3.7	4.8	4.4	5.1	10.6
8	3.80	3.55	3.70	3.65	3.7	4.3	4.6	5.3	9.8
9	3.90	3.55	3.65	3.7	3.7	4.3	4.8	5.3	8.6
10	3.80	4.10	3.55	3.7	3.65	4.0	4.8	5.3	7.8
11	3.75	3.65	3.55	3.85	3.65	4.0	5.0	6.3	7.5
12	3.75	3.58	3.50	3.8	3.65	4.0	4.8	7.0	7.9
13	3.72	3.65	3.50	3.75	3.7	4.45	4.6	7.0	7.5
14	3.68	3.70	3.50	3.7	3.65	4.35	4.5	7.3	7.0
15	3.65	3.70	3.50	3.7	3.65	4.25	4.6	7.7	7.3
16	3.60	3.70	3.50	3.65	3.6	4.35	4.6	8.0	7.7
17	3.63	3.70	3.50	3.8	3.6	4.25	4.6	8.2	7.3
18	3.60	3.70	3.50	3.7	3.65	4.1	4.6	8.7	6.8
19	3.60	3.70	3.50	3.7	3.7	4.1	4.6	8.6	7.2
20	3.60	3.65	3.50	3.7	3.65	4.2	4.5	7.5	7.6
21	3.60	3.70	3.50	3.65	3.65	4.1	4.4	6.7	6.8
22	3.60	3.85	3.50	3.65	3.65	4.0	4.3	6.3	6.1
23	3.58	4.00	3.50	3.65	3.65	4.0	4.3	5.9	5.8
24	3.60	3.85	3.50	3.65	3.6	4.0	4.4	6.1	5.4
25	3.60	3.65	3.45	3.6	3.55	4.0	4.4	6.2	5.1
26	3.60	3.60	3.45	3.65	3.5	4.1	4.45	6.5	5.1
27	3.60	3.60	3.45	4.0	3.55	4.1	4.7	6.2	5.2
28	3.55	3.50	3.52	3.85	3.55	4.1	4.8	6.2	5.3
29	3.60	3.55	3.57	3.85	3.6	4.1	4.8	8.9	5.4
30	3.62	3.55	3.52	3.7	.....	4.1	4.9	9.2	5.3
31	3.60	.....	3.66	3.7	.....	4.1	.....	9.7	.....

Rating table for San Joaquin River near Friant, Cal., for 1907 and 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
3.40	190	4.80	1,510	6.20	3,160	7.60	4,855
3.50	250	4.90	1,625	6.30	3,280	7.70	4,980
3.60	320	5.00	1,740	6.40	3,400	7.80	5,105
3.70	400	5.10	1,855	6.50	3,520	7.90	5,230
3.80	480	5.20	1,970	6.60	3,640	8.00	5,355
3.90	570	5.30	2,085	6.70	3,760	8.10	5,480
4.00	660	5.40	2,200	6.80	3,880	8.20	5,610
4.10	760	5.50	2,320	6.90	4,000	8.30	5,740
4.20	860	5.60	2,440	7.00	4,120	8.40	5,870
4.30	960	5.70	2,560	7.10	4,240	8.50	6,000
4.40	1,070	5.80	2,680	7.20	4,360	8.60	6,130
4.50	1,180	5.90	2,800	7.30	4,480		
4.60	1,290	6.00	2,920	7.40	4,605		
4.70	1,400	6.10	3,040	7.50	4,730		

NOTE.—This table is not applicable for obstructed-channel conditions. It is based on 11 discharge measurements made during 1907 and 1908, and is fairly well defined between gage heights 3.5 and 7 feet.

Daily discharge, in second-feet, of San Joaquin River near Friant, Cal., for 1909–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	320	2,000	1,840	2,180	11,100	16,800	10,100	1,780	1,070
2	320	1,620	1,890	2,660	12,100	19,200	11,300	1,620	1,120
3	400	1,840	2,000	3,180	13,000	21,400	13,200	1,620	980
4	400	2,360	3,300	3,640	13,600	22,800	11,000	1,670	847
5	400	1,940	3,180	3,300	13,700	21,600	8,800	1,560	762
6	400	2,180	2,600	2,850	13,800	19,600	6,560	1,670	762
7	1,460	2,180	2,420	2,850	14,600	16,800	4,770	1,560	847
8	810	2,850	2,300	3,240	16,200	15,200	4,370	1,500	762
9	2,020	2,240	2,180	3,500	13,600	13,400	4,300	1,500	720
10	1,680	3,370	2,000	4,530	11,600	13,200	4,300	1,350	720
11	860	6,660	1,890	3,920	10,700	14,000	4,930	1,300	720
12	760	12,500	1,780	3,500	8,360	13,200	6,560	1,200	720
13	6,860	8,480	1,720	4,770	7,920	13,800	7,700	1,250	638
14	26,800	4,930	1,840	5,520	7,060	14,200	6,360	1,250	598
15	16,200	3,440	1,940	6,560	8,480	14,900	4,930	1,120	559
16	5,880	3,710	2,180	8,700	7,920	13,400	4,690	1,070	559
17	4,450	3,440	2,240	9,060	8,480	10,600	4,690	1,070	521
18	3,370	3,440	2,240	9,180	8,820	9,310	4,070	1,120	483
19	2,850	2,920	2,240	8,590	9,180	8,140	3,240	1,200	483
20	2,480	2,660	2,000	9,560	8,820	7,700	2,790	1,300	483
21	18,900	3,110	2,240	7,480	11,000	9,180	2,720	1,200	483
22	13,500	2,420	2,240	5,610	8,940	10,600	2,600	1,200	483
23	4,450	2,180	2,420	4,850	7,590	12,700	2,790	1,250	483
24	4,000	2,120	2,180	5,520	6,360	14,600	2,980	1,160	446
25	3,710	2,000	1,840	5,880	7,920	13,700	3,040	1,070	410
26	3,440	1,890	2,000	8,940	9,940	12,500	2,790	980	410
27	3,570	1,840	2,000	9,940	11,800	11,700	2,600	890	410
28	2,780	1,840	1,840	9,680	10,900	12,000	2,060	980	410
29	2,360	.....	2,000	8,480	9,810	9,810	2,000	980	410
30	2,240	.....	2,480	9,560	7,920	10,500	1,890	935	340
31	2,120	.....	2,060	.....	13,100	.....	1,780	1,070	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
1	340	306	1,160	11,300	1,850	1,610	2,700	5,870	10,300	2,090	1,030	450
2	483	340	2,850	9,070	1,850	2,030	2,830	5,780	10,300	2,090	982	420
3	559	306	2,480	4,580	1,670	2,270	3,030	6,530	7,840	1,970	886	420
4	638	340	1,350	3,660	1,670	2,900	3,240	5,330	6,720	1,850	886	450
5	559	340	1,160	3,380	1,610	2,900	4,100	4,500	6,340	1,610	839	420
6	483	340	1,160	2,960	1,560	2,960	3,660	4,740	4,420	1,390	792	420
7	483	340	1,350	2,570	1,500	3,240	4,020	5,330	4,100	1,440	747	394
8	521	375	2,000	2,330	1,610	3,240	4,580	7,530	3,800	1,610	747	368
9	559	375	2,480	2,150	1,610	3,310	5,330	8,160	3,660	1,730	702	368
10	483	804	26,800	2,030	1,500	3,520	5,680	8,160	3,880	1,790	661	346
11	483	598	7,270	1,910	1,390	3,310	5,160	8,270	4,100	1,670	661	346
12	446	598	2,000	1,670	1,500	3,520	4,420	8,720	4,420	1,790	661	324
13	410	598	1,840	1,670	1,560	3,660	4,100	8,600	4,420	1 730	620	324
14	410	720	1,780	1,730	1,610	3,590	5,070	8,060	4,100	1,610	583	368
15	375	679	1,620	1,970	1,610	3,310	5,600	9,190	3,590	1,560	546	1,130
16	375	638	1,450	7,120	1,610	2,760	6,150	8,950	2,830	1,500	546	1,180
17	375	559	1,300	3,240	1,560	2,570	7,320	7,840	2,900	1,390	546	1,730
18	340	638	1,200	2,570	1,610	2,960	7,740	6,820	2,760	1,970	546	6,150
19	340	679	1,160	2,330	1,610	3,800	8,490	7,540	2,700	2,090	546	5,870
20	340	679	1,160	2,150	1,500	4,500	9,070	7,950	2,640	2,330	513	661
21	340	890	1,160	2,030	1,390	4,020	7,950	7,740	2,570	1,910	513	450
22	340	2,240	1,070	2,030	1,390	3,950	8,490	8,600	2,450	1,790	513	420
23	340	1,250	1,070	2,390	1,390	3,590	8,830	8,600	2,330	1,560	620	420
24	306	1,200	1,020	2,700	1,390	3,240	9,790	9,550	2,330	1,390	583	420
25	306	1,160	980	2,760	1,390	2,960	9,900	8,600	2,450	1,280	583	394
26	306	2,850	980	2,390	1,500	2,570	11,300	7,120	2,330	1,230	546	394
27	306	1,670	935	2,150	1,560	2,570	9,550	7,740	2,450	1,180	546	368
28	340	1,160	890	2,030	1,560	2,510	7,840	9,550	2,330	1,180	546	368
29	340	1,160	890	2,030	.....	2,330	6,920	9,550	2,330	1,230	513	346
30	340	1,160	10,600	2,030	.....	2,330	6,440	9,310	2,330	1,080	480	346
31	340	.....	27,900	1,970	.....	2,390	.....	9,550	.....	1,080	480	.....
1910–11.												
1	368	450	346	393	15,000	1,640	7,740	6,570	7,420	12,800	3,240	1,070
2	368	394	346	345	9,070	2,330	7,950	7,120	9,070	10,000	3,100	1,040
3	368	394	368	297	6,340	2,210	8,160	7,740	10,500	11,100	2,900	990
4	368	368	420	393	8,470	8,720	7,120	9,550	13,800	11,300	2,700	945
5	368	368	420	393	7,320	5,240	7,740	11,900	14,700	13,300	2,570	927

Daily discharge, in second-feet, of San Joaquin River near Friant, Cal., for 1909-1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910-11.												
6	368	368	420	393	4,610	3,950	11,600	8,720	16,200	13,800	2,610	855
7	368	368	420	393	3,950	3,600	7,640	7,840	14,400	19,500	2,570	812
8	368	368	480	393	3,440	18,800	6,530	8,380	14,400	14,000	2,450	770
9	368	368	513	393	3,020	7,660	6,720	8,830	15,000	13,800	2,330	754
10	368	346	480	4,420	2,700	13,600	6,530	8,380	16,200	10,500	2,210	730
11	368	346	513	1,240	2,510	7,320	5,600	8,600	19,200	8,160	2,090	698
12	792	324	1,440	812	3,410	5,550	5,070	9,310	19,800	10,400	2,020	690
13	480	368	1,180	900	4,020	4,740	4,740	8,600	23,100	11,900	1,860	690
14	546	620	620	1,410	3,270	4,420	4,420	8,950	20,400	12,100	1,740	652
15	546	546	620	1,600	2,700	4,100	4,420	7,320	19,200	11,900	1,740	615
16	583	420	546	1,430	2,190	3,800	4,740	6,440	21,500	12,100	1,660	615
17	661	420	546	990	2,210	4,100	5,070	6,530	21,100	12,100	1,640	615
18	620	420	480	909	1,980	4,180	6,920	8,160	20,200	13,300	1,710	615
19	702	420	480	900	1,950	4,180	6,920	9,070	20,200	10,500	1,660	585
20	661	420	480	838	1,880	4,100	6,820	10,300	19,900	9,070	1,610	578
21	583	420	480	945	2,160	4,180	7,120	11,600	19,500	7,950	1,590	578
22	546	368	450	1,740	1,830	3,880	8,160	16,200	16,500	6,340	1,480	578
23	546	420	450	1,280	1,770	4,420	9,190	14,700	14,600	5,600	1,380	1,230
24	546	420	480	1,430	1,830	4,660	9,310	12,000	11,500	6,340	1,280	1,040
25	513	480	480	10,700	1,720	4,580	9,740	9,190	9,790	5,420	1,230	853
26	480	420	450	4,260	1,640	4,660	9,910	10,000	11,900	5,600	1,230	770
27	450	420	420	2,210	1,640	4,820	8,600	10,000	14,700	4,950	1,180	690
28	420	346	324	1,740	1,640	5,140	7,120	9,550	14,700	3,950	1,130	540
29	420	346	368	7,530	.....	5,600	6,340	9,240	13,800	3,730	1,130	540
30	394	346	368	31,100	.....	6,340	6,340	8,950	12,800	3,660	1,080	855
31	394	.....	420	38,800	.....	6,920	.....	8,160	.....	3,520	1,080	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911-12.									
1	1,430	470	470	438	615	470	855	1,540	10,000
2	855	470	505	470	578	470	855	1,640	11,600
3	690	470	470	438	578	470	990	1,740	13,000
4	615	470	470	438	578	505	1,130	1,740	13,300
5	615	457	470	438	540	770	1,230	1,740	15,300
6	615	438	470	470	540	2,960	1,080	1,740	12,400
7	690	438	470	470	540	1,540	1,130	1,860	12,100
8	615	438	540	505	540	1,040	1,330	2,090	10,000
9	690	438	505	540	540	1,040	1,540	2,090	7,320
10	615	855	438	540	505	770	1,540	2,090	5,780
11	578	505	438	652	505	770	1,740	3,380	5,240
12	578	457	405	615	505	770	1,540	4,420	5,960
13	555	505	405	578	540	1,180	1,330	4,420	5,240
14	526	540	405	540	505	1,080	1,230	4,900	4,420
15	505	540	405	540	505	990	1,330	5,600	4,900
16	470	540	405	505	470	1,080	1,330	6,150	5,600
17	491	540	405	615	470	990	1,330	6,530	4,900
18	470	540	405	540	505	855	1,330	7,530	4,100
19	470	540	405	540	540	855	1,330	7,320	4,740
20	470	505	405	540	505	945	1,230	5,240	5,420
21	470	540	405	505	505	855	1,130	3,950	4,100
22	470	652	405	505	505	770	1,040	3,380	3,100
23	457	770	405	505	505	770	1,040	2,830	2,700
24	470	652	405	505	470	770	1,130	3,100	2,210
25	470	505	375	470	438	770	1,130	3,240	1,860
26	470	470	375	505	405	855	1,180	3,660	1,860
27	470	470	375	770	438	855	1,430	3,240	1,970
28	438	405	418	652	438	855	1,540	3,240	2,090
29	470	438	450	652	470	855	1,540	7,950	2,210
30	484	438	418	540	.....	855	1,640	8,600	2,090
31	470	.....	512	540	.....	855	.....	9,790	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: Jan. 1 to 12, 1909, fairly well defined between 250 and 4,120 second-feet; Jan. 13 to Dec. 31, 1909, fairly well defined; Jan. 1 to Dec. 31, 1910, well defined; Jan. 1 to Dec. 31, 1911, well defined; Jan. 1 to June 30, 1912, well defined. Discharge July 4 and 5, 1909, interpolated; discharge Oct. 1 to 4, 1910, estimated; discharge Sept. 30, 1911, estimated.

Monthly discharge of San Joaquin River near Friant, Cal., for 1907–1912.

[Drainage area, 1,640 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1907–8.							
October 18–31			658	0.401	0.21	18,300	A.
November	760	320	441	.269	.30	26,200	A.
December	2,200	250	659	.402	.46	40,500	A.
January	1,910	660	864	.527	.61	53,100	A.
February	2,320	810	1,010	.616	.66	58,100	A.
March	2,920	1,070	1,950	1.19	1.37	120,000	A.
April	6,130	1,400	3,350	2.04	2.28	199,000	A.
May	6,130	2,080	3,560	2.17	2.50	219,000	A.
June	3,940	2,320	2,960	1.80	2.01	176,000	A.
July	2,800	1,400	1,930	1.18	1.36	119,000	A.
August	3,280	480	1,190	.726	.84	73,200	A.
September	1,180	400	655	.399	.45	39,000	A.
						1,140,000	
1908–9.							
October	660	285	388	0.237	0.27	23,900	A.
November	360	220	272	.166	.19	16,200	B.
December	480	250	301	.184	.21	18,500	A.
January	26,800	320	4,510	2.75	3.17	277,000	B.
February	12,500	1,840	3,290	2.01	2.09	183,000	A.
March	3,300	1,720	2,160	1.32	1.52	133,000	A.
April	9,940	2,180	5,910	3.60	4.02	352,000	A.
May	16,200	6,360	10,500	6.40	7.38	646,000	A.
June	22,800	7,700	13,900	8.48	9.46	827,000	B.
July	13,200	1,780	5,030	3.07	3.53	309,000	A.
August	1,780	935	1,270	.774	.89	78,100	B.
September	1,120	340	621	.379	.42	37,000	B.
The year	26,800	220	4,010	2.45	33.15	2,900,000	
1909–10.							
October	638	306	407	0.248	0.29	25,000	B.
November	2,850	306	833	.508	.57	49,600	B.
December	27,900	890	3,580	2.18	2.51	220,000	B.
January	11,300	1,670	3,060	1.87	2.16	188,000	A.
February	1,850	1,390	1,560	.951	.99	86,600	A.
March	4,500	1,610	3,050	1.86	2.14	188,000	A.
April	11,300	2,700	6,310	3.85	4.30	375,000	A.
May	9,550	4,500	7,730	4.71	5.43	475,000	A.
June	10,300	2,330	3,990	2.43	2.71	237,000	A.
July	2,330	1,080	1,620	.988	1.14	99,600	A.
August	1,030	480	644	.393	.45	39,600	A.
September	6,150	324	869	.530	.59	51,700	A.
The year	27,900	306	2,800	1.71	23.28	2,040,000	
1910–11.							
October	792	368	482	0.294	0.34	29,600	A.
November	620	324	403	.246	.27	24,000	A.
December	1,440	324	510	.311	.36	31,400	A.
January	38,800	297	3,890	2.37	2.73	239,000	A.
February	15,000	1,640	3,720	2.27	2.36	207,000	A.
March	18,800	1,640	5,470	3.34	3.85	336,000	A.
April	11,600	4,420	7,140	4.35	4.85	425,000	A.
May	16,200	6,440	9,290	5.66	6.52	571,000	A.
June	23,100	7,420	15,900	9.70	10.82	946,000	A.
July	19,500	3,520	9,640	5.88	6.78	593,000	A.
August	3,240	1,080	1,880	1.15	1.33	116,000	A.
September	1,230	540	764	.466	.52	45,500	B.
The year	38,800	297	4,920	3.00	40.73	3,560,000	
1911–12.							
October	1,430	438	570	0.348	0.40	35,000	B.
November	855	405	517	.315	.35	30,800	B.
December	540	375	433	.264	.30	26,600	B.
January	770	438	534	.326	.38	32,800	B.
February	615	405	508	.310	.33	29,200	B.
March	2,960	470	923	.563	.65	56,800	A.
April	1,740	855	1,270	.774	.86	75,600	A.
May	9,790	1,540	4,090	2.50	2.88	251,000	A.
June	15,300	1,860	6,180	3.77	4.21	368,000	A.
The period						906,000	

SAN JOAQUIN RIVER AT HAMPTONVILLE,[1] CAL.

The following information regarding records of discharge of San Joaquin, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

The points of observation were at Hamptonville (formerly Jones's store), at the edge of the valley, and at the railroad crossing near Sycamore (now Herndon). Discharge measurements and special examinations were made many times during the period from 1878 to 1884 at both of these places. A good record of gage heights was kept at the railroad bridge from 1879 to 1882,[2] and a similar record at Hamptonville for one season. The results were determined from a discharge rating curve supplemented by estimates based on the relative discharge per square mile of the San Joaquin and nearby drainage areas. During the period covered by the table practically no water was diverted from the stream above the lower station. The results of the data at that point admitted of direct application to the upper station, no account being taken of loss or gain in the river channel, which is known not to be large. The records are said to be "worthy of full reliance for all purposes of a water-supply study for the period covered." [3]

Monthly discharge of San Joaquin River at Hamptonville, Cal., for 1878–1884.

[Drainage area, 1,637 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.						
November [a]			330	0.20	0.22	19,636
December [a]			410	.25	.29	25,210
January	3,010	370	609	.37	.43	37,446
February	5,420	620	1,276	.78	.81	70,865
March	3,340	1,300	1,953	1.19	1.37	120,085
April	8,560	2,360	3,849	2.34	2.62	229,031
May	10,030	2,850	5,302	3.24	3.74	326,007
June	11,640	4,200	6,379	3.89	4.35	379,576
July	4,460	1,300	2,303	1.41	1.63	141,606
August	1,300	550	786	.48	.55	48,329
September	480	310	381	.23	.26	22,671
October	480	260	373	.23	.27	22,935
The period			1,996	1.22	16.54	1,440,000
1879–80.						
November	420	370	411	.25	.28	24,456
December	4,700	700	1,140	.70	.81	70,096
January	1,020	770	825	.50	.58	50,727
February	2,360	770	942	.57	.61	54,184
March	1,640	1,120	1,229	.75	.86	75,568
April	15,580	1,300	4,846	2.95	3.30	288,357
May	25,000	5,420	13,170	8.02	9.28	809,792

[a] Estimated from run-off of neighboring streams.

[1] This station was very near the location of the present Friant station.
[2] Continuous gage height records also kept at this point (Herndon) from 1882 to 1909.
[3] For discussion of accuracy of records of San Joaquin River see pages 40–41.

Monthly discharge of San Joaquin River at Hamptonville, Cal., for 1878–1884—Contd.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1879–80.						
June	25,600	14,180	18,120	11.09	12.35	1,078,214
July	14,650	3,350	8,010	4.89	5.64	492,516
August	4,700	840	1,730	1.06	1.22	106,374
September	840	555	734	.45	.50	43,676
October	480	380	422	.26	.30	25,948
The year	25,600	370	4,298	2.62	35.73	3,120,000
1880–81.						
November	450	370	380	.23	.26	22,612
December	6,730	395	2,001	1.22	1.41	123,037
January	59,800	1,024	3,856	2.35	2.71	237,096
February	22,450	2,440	6,340	3.87	4.03	352,106
March	6,570	2,440	2,855	1.74	2.01	175,547
April	13,250	5,900	8,008	4.89	5.45	476,509
May	16,500	5,900	9,095	5.53	6.41	559,230
June	9,230	4,300	5,948	3.63	4.05	353,931
July	5,180	2,200	3,064	1.87	2.16	188,398
August	1,640	760	1,260	.77	.89	77,474
September	760	490	584	.36	.40	34,750
October	490	430	463	.28	.32	28,469
The year	59,800	370	3,654	2.23	30.10	2,630,000
1881–82.						
November	530	380	461	.28	.31	27,431
December	2,740	340	632	.59	.45	38,860
January	330	290	303	.19	.22	18,631
February	520	280	330	.20	.21	18,327
March	3,890	340	1,522	.93	1.07	93,584
April	7,360	2,540	3,409	2.08	2.32	202,849
May	12,860	7,360	8,850	5.40	6.23	544,165
June	13,980	4,280	7,867	4.79	5.36	468,119
July	6,900	700	2,918	1.78	2.05	179,421
August	1,630	450	591	.36	.42	36,339
September	.....	.....	240	.15	.17	14,281
October	.....	.....	564	.34	.39	34,679
The year	.....	.....	2,307	1.41	19.20	1,680,000
1882–83.[a]						
November	.....	.....	490	.30	.33	29,157
December	.....	.....	320	.20	.23	19,676
January	.....	.....	320	.20	.23	19,676
February	.....	.....	320	.20	.21	17,771
March	.....	.....	1,150	.70	.81	70,711
April	.....	.....	2,130	1.30	1.45	126,744
May	.....	.....	7,370	4.50	5.19	453,164
June	.....	.....	6,220	3.80	4.24	370,116
July	.....	.....	1,470	.90	1.04	90,387
August	.....	.....	490	.30	.35	30,129
September	.....	.....	410	.25	.28	24,397
October	.....	.....	330	.20	.23	20,291
The year	.....	.....	1,752	1.07	14.59	1,270,000
1883–84.[a]						
November	.....	.....	250	.15	.17	14,876
December	.....	.....	250	.15	.17	15,372
January	.....	.....	410	.25	.29	25,210
February	.....	.....	2,460	1.50	1.62	141,501
March	.....	.....	4,090	2.50	2.88	251,484
April	.....	.....	3,270	2.00	2.23	194,578
May	.....	.....	8,190	5.00	5.76	503,583
June	.....	.....	16,400	10.02	11.18	975,868
July	.....	.....	13,100	8.00	9.22	805,488
August	.....	.....	3,270	2.00	2.31	201,064
September	.....	.....	980	.60	.67	58,314
October	.....	.....	820	.50	.58	50,420
The year	.....	.....	4,458	2.72	37.08	3,240,000

[a] Estimated from run-off of neighboring streams and from previous measurements.

SAN JOAQUIN RIVER AT HERNDON, CAL.

This station is at the Southern Pacific Railroad bridge about 12 miles northwest of Fresno and 20 miles below Friant.

In 1879 the engineering department of the Southern Pacific Co. set a staff gage on the old trestle bridge, which was used for the regular gaging station established at the beginning of 1895. In 1899 the trestle was replaced by a steel bridge, to the center pier of which a new staff gage was attached at the datum of the old gage. Meter measurements were discontinued at the end of 1902, because of the continual change in the section caused by shifting sand. Since that date only a gage record has been kept.

Gage heights published below for 1891–1894 and 1902–1909 should be used with caution. Since 1909 gage heights have been omitted from the regular reports, for unless frequent meter measurements are made the use of the gage heights in the determination of discharge is liable to lead to grave errors.

The following gage records have been furnished through the courtesy of employees of the Southern Pacific Co. Discharge records published below are approximate.

Discharge measurements of San Joaquin River at Herndon, Cal., 1895–1902.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-feet.*
1895.			
Jan. 9	A. P. Davis	4.00	1,995
Mar. 22	J. B. Lippincott	3.85	1,938
May 5	....do	6.65	7,419
June 23	....do	8.00	11,225
Aug. 31	....do	3.00	677
Oct. 11	....do	2.60	332
Nov. 25	....do	2.55	270
1896.			
Apr. 13	J. A. Vogleson	4.10	2,406
June 11	J. B. Lippincott	9.33	15,942
Nov. 2	....do	2.75	424
1897.			
Feb. 14	J. B. Lippincott	3.58	1,117
May 31	....do	8.60	10,500
July 16	A. Q. Campbell	4.50	3,223
Sept. 8	....do	2.66	271
Nov. 2	....do	2.92	515
Dec. 21	J. B. Lippincott	3.00	699
1898.			
Apr. 19	J. B. Lippincott	5.42	4,162
May 30	....do	4.58	2,235
July 28	....do	3.00	611
Sept. 2	....do	2.52	328
Dec. 20	....do	2.50	287
1899.			
Mar. 5	J. B. Lippincott	3.25	786
Apr. 18	S. G. Bennett	6.34	5,310
May 13	....do	7.00	7,435
June 2	....do	5.76	4,177
27	....do	4.90	2,922
Aug. 1	....do	3.32	743
Sept. 8	....do	2.67	196

Discharge measurements of San Joaquin River at Herndon, Cal., 1895–1902—Contd.

Date.	Hydrographer.	Gage height.	Discharge.
1900.		*Feet.*	*Sec.-feet.*
Feb. 2	J. B. Lippincott	3.25	1,003
Apr. 3	S. G. Bennett	4.66	2,641
May 15	.....do	5.91	4,448
June 18	.....do	5.67	3,710
Aug. 9	.....do	2.83	466
Sept. 1	.....do	2.50	246
28	.....do	2.33	197
Dec. 30	.....do	3.33	614
1901.			
Jan. 30	S. G. Bennett	4.00	1,357
Mar. 2	.....do	6.80	6,179
Apr. 3	.....do	5.00	3,357
July 31	.....do	5.67	3,909
Oct. 16	.....do	2.25	352
1902.			
May 14	S. G. Bennett	7.35	7,381
Sept. 11	L. M. Lawson	.....	323

Daily gage height, in feet, of San Joaquin River at Herndon, Cal., for 1891–1909.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891.									
1	2.33	1.75	3.00	3.17	6.50	5.25	6.75	3.58	2.33
2	2.33	1.75	7.00	3.17	7.00	5.00	6.50	3.33	2.33
3	2.25	1.75	3.33	3.17	7.00	5.08	6.33	3.25	2.17
4	2.25	1.75	4.00	3.33	7.25	5.50	6.00	3.42	2.17
5	2.25	1.75	3.33	3.67	7.25	5.67	5.50	3.25	2.08
6	2.17	1.75	3.33	3.92	7.25	5.92	5.00	3.08	2.08
7	2.17	1.67	3.33	4.00	7.33	7.50	5.00	2.83	2.08
8	2.17	1.67	3.25	4.00	7.00	8.00	4.75	2.75	2.08
9	2.08	1.67	3.25	4.00	7.00	7.75	4.50	2.75	2.08
10	2.08	1.67	3.17	4.00	6.33	7.17	4.50	2.67	2.08
11	2.00	1.67	3.17	4.00	6.67	7.25	4.42	2.67	2.00
12	2.00	1.67	3.17	3.92	6.50	7.08	4.42	2.58	2.00
13	2.00	1.67	3.42	3.83	6.33	6.83	4.25	2.58	2.00
14	2.00	1.67	3.67	3.67	6.17	6.50	4.25	2.83	1.92
15	2.00	1.92	3.50	3.58	6.08	6.00	4.25	2.83	1.92
16	2.00	3.50	3.50	3.50	6.08	5.67	4.25	2.75	1.83
17	2.00	3.00	3.75	4.50	6.33	5.33	4.33	2.67	1.83
18	2.00	2.33	3.75	4.00	6.25	5.75	4.42	2.67	1.75
19	2.00	2.08	3.75	4.00	6.25	7.17	4.25	2.58	1.75
20	2.00	2.00	3.75	3.83	6.17	6.50	4.17	2.58	1.67
21	1.92	2.00	3.75	4.83	6.17	6.00	4.08	2.50	1.67
22	1.92	3.00	3.75	4.58	6.00	6.17	4.00	2.50	1.67
23	1.92	8.00	3.67	5.50	5.83	6.25	3.83	2.50	1.58
24	1.92	6.00	3.58	5.50	5.50	6.42	3.83	2.33	1.50
25	1.83	4.00	3.50	5.33	5.42	6.50	3.92	2.42	1.50
26	1.83	3.17	3.42	5.42	5.50	6.33	3.92	2.42	1.50
27	1.83	3.08	3.42	5.50	5.58	6.75	3.92	2.42	1.42
28	1.83	3.00	3.42	6.00	5.58	6.75	4.00	2.50	1.42
29	1.83	.....	3.33	6.42	5.50	7.00	4.17	2.50	1.33
30	1.83	.....	3.25	6.50	5.50	6.75	4.25	2.50	1.25
31	1.83	.....	3.25	.....	5.42	.....	3.83	2.50	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891–92.												
1	1.25	1.00	0.75	3.00	1.50	2.00	3.08	3.67	7.00	5.00	2.25	1.25
2	1.25	.92	.75	2.50	1.50	2.08	3.00	3.75	8.00	5.08	2.17	1.17
3	1.25	.92	.75	2.17	1.42	2.67	3.00	3.92	7.83	4.83	2.17	1.17
4	1.25	.92	.92	2.17	1.42	2.42	3.00	3.92	7.00	4.75	2.17	1.17
5	1.17	.92	.92	2.08	1.42	2.50	2.83	3.75	6.00	4.50	2.08	1.17
6	1.17	.92	.92	2.08	1.42	2.33	2.67	3.33	6.00	4.33	2.08	1.17
7	1.17	.92	.92	2.17	1.42	2.17	2.75	3.17	5.50	3.75	2.08	1.17
8	1.17	.92	.83	2.33	1.33	2.00	3.83	3.08	5.00	3.50	2.08	1.08
9	1.17	.92	.83	2.33	1.33	2.00	4.00	3.08	5.00	3.67	2.08	1.08
10	1.08	.92	1.17	2.25	1.33	2.17	4.25	3.75	4.83	3.50	2.00	1.08

Daily gage height, in feet, of San Joaquin River at Herndon, Cal., for 1891–1909—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891–92.												
11	1.08	0.83	1.25	2.17	1.33	2.33	4.08	3.50	4.67	3.42	2.00	1.08
12	1.08	.83	1.25	2.00	1.33	2.75	3.75	3.67	4.50	3.25	2.00	1.00
13	1.08	.83	1.33	1.83	1.33	2.83	3.42	3.17	4.17	3.17	2.00	1.00
14	1.08	.83	1.33	1.75	1.42	2.83	3.33	3.42	4.33	2.92	1.83	1.00
15	1.08	.83	1.33	1.67	1.42	2.92	3.42	3.50	4.25	2.75	1.67	1.00
16	1.08	.83	1.33	1.67	1.42	3.08	3.75	5.00	4.00	2.67	1.58	1.00
17	1.08	.83	1.33	1.67	1.33	3.08	3.67	4.50	5.00	2.67	1.58	1.00
18	1.08	.83	1.33	1.67	1.33	3.00	3.50	5.33	5.33	2.50	1.58	1.00
19	1.08	.83	1.25	1.58	1.42	2.75	3.17	6.00	6.17	2.75	1.50	.92
20	1.08	.75	1.33	1.58	2.67	3.17	3.00	6.50	6.33	2.83	1.50	.92
21	1.00	.75	1.42	1.50	2.75	3.08	2.83	7.00	6.17	2.83	1.50	.92
22	1.00	.75	1.42	1.50	2.67	2.83	3.00	7.67	5.83	2.75	1.42	.92
23	1.00	.75	1.33	1.50	2.67	2.67	3.08	7.00	5.25	2.67	1.42	.92
24	1.00	.75	1.25	1.42	2.58	2.58	3.17	7.50	5.08	2.67	1.42	.92
25	1.00	.75	1.17	1.42	2.42	2.33	3.17	7.58	4.83	2.58	1.42	.92
26	1.00	.75	1.17	1.42	2.33	2.25	3.42	7.00	4.50	2.58	1.33	.92
27	1.00	.75	1.17	1.42	2.08	2.08	3.33	6.83	4.33	2.50	1.33	.83
28	1.00	.75	1.17	1.42	2.00	2.08	3.33	6.50	5.50	2.50	1.33	.83
29	1.00	.75	2.25	1.42	2.00	2.00	3.50	7.00	5.33	2.33	1.33	.83
30	1.00	.75	2.75	1.42	.....	2.75	3.58	7.83	5.17	2.33	1.25	.83
31	1.00	.....	3.17	1.42	.....	3.50	.....	7.50	.....	2.33	1.25	.....
1892–93.												
1	.83	.92	5.33	3.50	6.50	3.58	6.83	5.67	7.75	8.00	4.83	3.67
2	.83	.92	4.00	3.17	5.33	3.58	6.58	5.83	9.00	8.25	5.00	3.58
3	.83	.83	3.75	3.00	5.00	3.50	6.33	5.75	10.50	8.42	5.00	3.58
4	.83	.83	4.25	2.83	4.50	3.67	6.00	5.92	11.33	8.50	5.00	3.50
5	.83	.83	3.25	2.58	6.92	3.67	6.20	6.33	11.50	8.17	5.00	3.50
6	.83	.83	2.83	2.42	5.00	3.83	6.50	6.50	11.42	7.75	5.00	3.50
7	.83	.83	2.17	2.33	4.50	4.00	6.17	6.75	11.25	7.25	5.00	3.58
8	.83	.83	2.08	2.00	4.42	4.00	5.83	7.33	10.50	7.00	5.00	3.58
9	.83	.83	2.00	2.00	8.50	5.25	5.25	7.67	10.67	7.50	4.92	3.50
10	1.25	.83	1.83	2.00	7.83	4.42	5.33	8.00	10.50	7.58	4.83	3.42
11	1.08	.83	1.75	2.17	6.50	4.58	5.08	8.67	10.75	7.33	4.67	3.42
12	1.00	.83	1.75	2.33	6.00	5.50	5.00	9.33	10.33	7.00	4.50	3.33
13	1.00	.75	1.67	2.33	5.67	5.00	5.00	9.50	10.00	6.67	4.25	3.33
14	1.00	.75	1.67	2.17	5.17	4.50	5.25	10.33	9.50	6.25	2.17	3.17
15	1.00	.75	1.67	2.00	4.83	5.17	5.25	10.50	9.17	6.00	4.00	3.17
16	.92	.75	1.67	2.00	4.58	4.83	5.08	10.25	9.00	6.00	4.00	3.00
17	.92	.75	1.58	4.50	4.58	4.50	5.00	10.00	8.83	5.83	4.17	3.00
18	.92	.75	1.50	3.50	4.50	4.33	4.83	9.75	8.50	6.25	4.17	2.83
19	.92	.75	1.50	3.25	4.50	4.33	5.00	8.50	8.42	6.50	4.00	2.75
20	.92	.75	1.42	3.17	4.33	8.50	5.33	8.17	8.17	6.67	4.00	2.75
21	.92	.67	1.42	3.00	4.25	12.00	5.42	7.75	8.00	6.50	4.00	2.67
22	.83	.67	1.42	2.75	4.25	8.00	6.00	8.00	8.00	6.25	3.83	2.58
23	.83	.67	6.00	3.00	4.00	6.50	6.67	8.17	8.17	6.00	3.75	2.58
24	.83	.67	7.00	2.50	4.00	6.00	6.17	8.50	8.33	6.00	3.75	2.50
25	.83	.67	14.00	2.50	4.08	5.50	6.00	8.17	8.00	6.17	3.58	2.50
26	.83	.92	7.00	2.42	4.00	5.67	5.75	8.00	7.83	6.00	3.83	2.33
27	.83	1.00	6.50	3.50	3.83	6.83	5.67	7.75	7.67	6.00	3.75	2.33
28	.83	1.00	5.00	5.50	3.67	6.58	5.50	7.83	7.42	6.17	3.75	2.25
29	.92	1.00	5.00	4.00	.....	6.83	5.17	8.00	7.50	5.83	3.67	2.25
30	.92	3.50	4.33	4.17	.....	6.67	5.00	8.17	7.67	5.50	3.75	2.08
31	.92	.....	4.00	9.00	.....	6.75	.....	8.00	.....	5.00	3.75	.....
1893–94.												
1	2.08	1.67	2.33	2.50	6.67	2.83	4.83	4.42	6.50	4.50	3.25	3.33
2	2.08	1.67	2.33	2.58	6.58	3.33	5.00	4.75	6.17	4.50	3.17	3.17
3	2.25	1.67	2.33	3.00	6.50	3.83	5.17	5.00	5.83	4.42	3.33	3.17
4	2.17	1.58	2.33	2.83	6.50	3.50	5.00	5.58	5.67	4.42	3.33	3.17
5	2.00	1.58	2.25	2.75	6.42	3.33	5.00	6.33	5.50	4.42	3.42	3.08
6	2.00	1.50	2.33	2.75	6.42	3.33	5.08	6.58	5.50	4.50	3.33	3.08
7	1.83	1.50	2.17	2.58	6.42	3.25	5.00	7.00	5.17	4.50	3.33	3.00
8	1.75	1.50	2.17	2.58	6.46	3.25	5.33	7.50	4.83	4.42	3.25	3.00
9	1.75	1.50	2.17	2.50	8.25	3.08	5.50	8.58	4.83	4.42	3.25	3.00
10	1.67	1.50	2.17	2.50	12.50	5.50	6.00	8.50	5.00	4.33	3.17	3.00
11	1.67	1.50	2.17	2.50	12.00	3.33	6.83	8.00	5.00	4.33	3.17	2.83
12	1.58	1.50	2.00	2.50	10.33	3.33	6.25	7.67	5.00	4.33	3.08	2.83
13	1.92	1.42	2.00	2.50	9.08	4.00	5.83	7.50	4.50	4.17	2.83	2.75
14	2.00	1.42	2.00	2.33	8.67	4.25	5.50	7.00	6.50	4.17	2.75	2.67
15	2.00	1.42	2.00	2.33	8.08	4.00	5.33	6.75	4.42	4.17	2.58	2.67

Daily gage height, in feet, of San Joaquin River at Herndon, Cal., for 1891–1909—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May.	June.	July.	Aug.	Sept.
1893–94.												
16	1.92	1.42	2.00	3.50	9.00	4.17	5.08	6.50	5.00	4.25	2.67	2.58
17	1.92	1.33	2.00	3.17	9.25	4.50	5.00	6.42	5.25	4.00	2.67	2.58
18	1.83	1.33	2.00	3.00	12.00	4.33	5.00	6.17	5.50	3.92	2.58	2.58
19	1.83	1.33	2.58	2.75	15.67	4.33	4.83	6.00	5.42	3.83	2.58	2.58
20	1.83	1.33	2.50	2.75	17.33	4.17	5.00	5.75	5.17	3.83	2.50	2.50
21	1.75	1.33	2.50	2.83	17.00	3.83	5.33	5.50	5.00	3.75	2.50	2.50
22	1.75	1.33	2.50	2.58	16.33	3.75	5.25	5.33	4.83	3.75	2.50	2.42
23	1.75	1.33	2.50	3.33	15.67	3.42	5.17	5.50	4.50	3.58	2.50	2.42
24	1.67	1.33	3.00	3.33	15.00	3.50	5.00	6.50	4.50	3.50	2.50	2.33
25	1.67	1.33	2.75	3.17	14.67	3.50	4.83	6.67	4.42	3.42	2.50	2.17
26	1.67	1.83	2.50	3.17	13.00	3.58	5.58	7.00	4.83	3.42	2.50	2.08
27	1.83	2.17	2.67	3.00	13.00	4.00	5.00	7.17	5.00	3.33	2.50	2.00
28	1.75	2.50	2.67	3.00	12.67	4.50	4.92	6.00	5.25	3.42	2.58	2.00
29	1.75	2.83	2.50	3.00	.....	4.74	5.00	5.75	5.17	3.42	3.75	2.00
30	1.67	2.50	2.33	2.92	.....	4.83	4.58	5.83	4.67	3.42	4.33	2.00
31	1.75	.....	2.33	2.92	.....	5.00	.....	6.50	.....	3.25	3.83	.....
1894–95.												
1	2.17	3.00	2.58	3.83	4.33	4.17	4.92	5.67	6.50	6.83	4.17	3.00
2	2.42	2.92	2.42	3.67	3.83	4.25	4.92	8.00	6.50	6.50	3.92	3.08
3	2.50	2.92	2.42	3.50	3.67	4.25	4.83	7.25	6.67	6.50	3.92	3.08
4	2.50	2.83	2.42	3.50	3.50	4.17	5.00	6.75	7.33	6.42	3.83	3.08
5	2.58	2.83	2.50	8.00	3.42	4.33	5.00	6.83	8.25	5.92	4.25	3.00
6	2.83	2.67	2.67	5.00	3.25	4.25	4.83	7.00	8.67	5.67	4.25	3.00
7	3.00	2.67	2.92	4.08	3.50	4.33	4.92	8.00	9.08	5.83	4.08	2.83
8	3.00	2.67	3.33	3.75	3.67	4.33	5.17	8.50	9.00	6.00	4.08	2.75
9	3.00	2.58	3.75	4.33	3.67	4.50	5.33	9.00	8.50	6.00	4.00	2.67
10	2.75	2.50	3.33	4.17	3.75	4.42	5.08	9.00	8.50	6.17	3.92	2.50
11	2.67	2.50	3.00	4.00	3.75	4.42	5.42	8.83	8.50	6.00	3.75	2.50
12	2.50	2.50	2.83	4.00	6.00	4.33	5.33	9.33	8.50	5.67	3.58	2.50
13	2.50	2.50	2.83	3.92	7.00	4.50	5.50	9.50	8.75	5.25	3.83	2.83
14	2.50	2.50	2.75	3.83	5.00	4.50	5.83	9.67	8.75	5.25	3.67	7.00
15	2.42	2.42	2.67	4.50	4.75	4.17	5.67	10.33	8.00	5.17	3.42	4.83
16	2.25	2.42	2.83	4.67	4.75	4.00	5.33	10.83	7.50	5.17	3.58	4.00
17	2.25	2.42	2.83	4.92	4.42	4.00	5.50	10.33	7.25	5.25	3.50	4.00
18	2.25	2.42	3.00	7.00	4.33	4.08	6.08	10.17	7.00	5.17	3.42	3.75
19	2.17	2.42	3.17	5.50	4.00	4.17	6.42	10.00	7.17	4.92	3.33	3.58
20	2.17	2.42	5.50	4.50	4.17	3.83	7.00	9.75	7.25	4.83	3.25	3.50
21	2.58	2.42	5.00	4.42	4.25	4.00	7.50	9.17	7.42	5.00	3.33	3.33
22	2.92	2.42	4.83	4.17	4.25	3.92	7.33	9.00	7.42	4.83	3.17	3.25
23	3.00	2.42	4.92	4.75	5.00	3.83	7.00	9.00	7.75	4.75	3.33	3.00
24	3.33	2.33	4.50	4.50	4.50	3.83	7.00	8.83	8.00	4.67	3.25	2.83
25	3.42	2.33	3.75	4.50	4.67	3.75	6.75	9.00	7.50	4.58	3.33	2.75
26	3.50	2.33	3.50	4.33	4.42	4.17	7.00	9.00	7.58	4.50	3.17	2.75
27	3.50	2.33	3.33	4.25	4.25	4.33	6.83	8.33	8.00	4.50	3.25	2.67
28	3.42	2.50	4.00	4.00	4.17	7.33	6.67	7.83	7.67	4.42	3.17	2.58
29	3.25	2.50	4.50	3.83	.....	6.75	6.58	7.17	7.17	4.42	3.25	2.58
30	3.17	2.58	5.75	3.58	.....	5.25	6.00	7.00	6.92	4.25	3.25	2.50
31	3.00	.....	4.00	4.83	.....	5.00	.....	6.92	.....	4.08	3.08	.....
1895–96.												
1	2.50	2.50	2.83	2.60	3.70	3.80	4.60	4.50	9.20	5.90	3.50	3.40
2	2.50	2.50	2.83	2.50	3.70	3.90	4.40	4.60	9.60	5.70	3.40	3.30
3	2.50	2.50	2.67	2.50	3.60	3.80	4.20	4.70	9.70	5.50	3.50	3.20
4	2.50	2.50	2.58	2.50	3.60	3.70	4.10	4.90	9.10	5.40	3.50	3.10
5	2.50	2.67	2.58	2.60	3.40	3.50	4.10	4.90	9.10	6.00	3.40	3.00
6	2.58	2.67	2.58	2.70	3.30	3.40	4.00	5.30	8.90	6.60	3.40	3.00
7	2.58	2.58	2.50	2.70	3.30	3.40	4.20	4.80	8.80	6.10	3.30	2.80
8	2.58	2.58	2.50	2.60	3.20	3.40	4.00	4.50	8.80	5.80	3.30	3.20
9	2.58	2.58	2.50	2.60	3.20	3.50	4.00	4.50	8.70	5.70	3.30	3.30
10	2.58	2.67	2.50	2.60	3.30	3.50	4.00	4.30	8.90	5.80	3.30	3.10
11	2.58	2.75	2.50	2.60	3.30	3.60	4.30	4.30	8.70	6.90	3.30	3.10
12	2.58	2.75	2.50	2.60	3.30	3.70	4.20	4.60	8.00	6.10	3.30	2.90
13	2.58	2.75	2.50	2.60	3.30	3.80	4.10	4.60	7.80	5.90	3.30	2.90
14	2.50	2.75	2.50	2.60	3.30	3.80	4.20	4.90	8.80	5.60	3.30	2.80
15	2.50	2.67	2.50	2.60	3.30	3.80	4.10	5.20	8.80	5.20	3.30	2.70
16	2.50	2.67	2.50	2.80	3.30	4.00	4.30	5.20	8.70	4.80	3.30	2.70
17	2.50	2.67	2.50	3.20	3.30	4.00	5.60	5.00	8.90	4.70	3.30	2.70
18	2.50	2.67	2.50	4.20	3.30	4.00	4.70	5.20	8.70	5.20	3.30	2.70
19	2.50	2.58	2.50	8.50	3.30	4.00	4.20	5.00	8.00	4.80	3.50	2.70
20	2.67	2.58	2.50	5.00	3.30	4.00	4.00	4.80	7.80	4.70	3.50	2.60

Daily gage height, in feet, of San Joaquin River at Herndon, Cal., for 1891–1909—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895–96.												
21	3.00	2.58	2.75	8.00	3.30	4.30	4.00	5.00	8.00	4.50	3.40	2.50
22	3.50	2.58	3.00	6.50	3.30	4.30	4.00	5.00	7.70	4.40	3.30	2.50
23	3.42	2.58	2.92	4.80	3.30	4.70	3.90	5.10	7.30	4.60	3.30	2.50
24	3.33	2.58	2.83	4.30	3.40	4.80	3.90	5.60	7.00	4.50	3.30	2.50
25	3.33	2.50	2.83	4.00	3.40	4.70	4.00	6.10	7.00	4.50	3.30	2.50
26	3.17	2.50	2.75	3.80	3.50	4.80	5.90	7.10	6.60	4.50	3.10	2.60
27	2.83	2.50	2.75	4.00	3.50	8.30	5.40	7.10	6.40	4.40	3.00	2.50
28	2.67	2.67	2.75	5.00	3.50	5.90	4.80	8.10	6.30	4.00	3.00	2.50
29	2.67	2.67	2.67	4.30	3.80	5.40	4.60	10.20	6.30	3.90	3.00	2.30
30	2.58	2.67	2.67	4.00	.....	5.00	4.70	9.30	6.30	3.70	3.00	2.30
31	2.50	.....	2.58	3.80	.....	4.70	.....	8.50	.....	3.70	3.00	.....
1896–97.												
1	2.30	2.80	2.80	3.17	4.38	4.00	4.13	7.50	8.37	4.92	3.50	2.83
2	2.30	2.70	2.70	3.00	9.33	4.54	4.38	7.46	7.42	5.21	3.50	2.83
3	2.30	2.70	2.70	3.00	5.17	4.00	4.13	7.67	7.12	5.21	3.42	2.83
4	2.50	2.70	2.70	2.92	4.54	4.00	4.17	8.79	7.29	5.25	3.42	2.83
5	2.50	2.70	2.70	2.96	4.13	4.00	4.21	9.13	7.12	5.00	3.42	2.83
6	2.40	2.70	2.80	3.00	6.46	3.75	4.17	9.25	7.25	5.00	3.29	2.83
7	2.40	2.70	3.00	2.92	5.00	5.29	4.33	9.21	7.12	4.79	3.25	2.75
8	2.30	2.70	2.90	2.92	4.58	4.79	4.46	8.38	7.29	4.50	3.25	2.67
9	2.30	2.70	2.80	2.92	4.13	4.17	5.29	8.25	7.12	4.25	3.37	2.67
10	2.30	2.70	2.80	2.92	4.00	4.00	5.63	8.25	7.04	4.12	3.33	2.54
11	2.30	3.30	2.80	2.92	3.79	4.00	5.71	8.42	6.42	4.12	3.25	2.50
12	2.30	3.20	2.80	3.00	3.67	3.92	6.50	8.58	6.37	4.29	3.25	2.50
13	2.30	3.00	2.80	3.00	3.54	3.83	6.71	9.08	6.50	4.37	3.12	2.50
14	2.30	2.90	3.30	3.00	3.58	3.83	6.83	9.25	6.92	4.79	3.08	2.50
15	2.30	2.90	3.80	3.08	3.50	3.83	7.13	8.96	6.54	4.58	3.00	2.42
16	2.30	2.80	3.50	3.00	3.50	3.75	7.75	8.67	6.21	4.50	3.08	2.33
17	2.30	2.80	3.30	3.00	3.42	3.92	7.79	8.13	5.46	4.33	3.08	2.33
18	2.30	2.80	3.10	3.00	4.13	3.83	8.17	8.21	5.04	4.25	3.08	2.33
19	2.30	2.80	3.00	2.92	4.00	4.75	7.66	8.13	4.70	4.12	3.00	2.38
20	2.30	2.80	3.00	2.92	4.13	4.08	6.87	7.92	4.70	3.96	3.08	2.42
21	2.30	2.80	2.90	2.92	3.96	4.00	6.42	8.83	4.54	3.92	3.08	2.42
22	2.40	2.70	2.80	2.83	3.79	3.92	6.46	9.50	4.42	3.87	3.00	2.33
23	2.40	2.80	2.80	2.83	3.75	3.83	6.29	9.96	4.29	3.83	3.00	2.33
24	2.30	3.00	2.70	2.83	3.58	4.00	6.17	10.17	4.29	3.66	3.00	2.33
25	2.30	4.20	2.70	2.83	3.50	3.92	6.00	9.70	4.33	3.50	3.08	2.33
26	2.30	3.70	2.80	2.83	3.50	4.00	6.71	9.12	4.46	3.50	3.08	2.33
27	2.50	3.70	2.80	2.83	3.42	4.50	7.46	8.58	4.21	3.50	3.08	2.33
28	2.50	3.20	3.00	2.83	3.96	4.29	7.67	8.79	4.21	3.50	3.00	2.33
29	3.00	3.00	3.10	2.83	.....	5.38	7.67	8.87	4.37	3.50	3.00	2.33
30	3.00	2.90	3.10	3.17	.....	4.29	7.54	8.70	4.54	3.50	3.00	2.33
31	2.80	.....	3.00	3.38	.....	4.08	.....	8.54	.....	3.50	2.92	.....
1897–98.												
1	2.33	2.92	3.00	3.17	3.08	3.25	3.42	4.96	4.29	4.00	3.00	2.58
2	2.50	2.92	3.17	3.08	3.08	3.33	3.46	4.96	4.79	3.92	3.00	2.58
3	2.50	2.92	3.20	3.08	3.08	3.21	3.50	5.08	4.54	3.58	3.00	2.58
4	2.50	2.92	3.20	3.08	3.08	3.21	3.46	4.71	4.46	3.50	3.00	2.50
5	2.50	2.75	3.17	3.00	2.92	3.17	3.42	4.71	4.42	3.50	3.00	2.50
6	2.50	2.75	3.08	3.00	3.00	3.37	3.46	4.50	4.54	3.50	3.00	2.50
7	2.50	2.75	3.00	3.00	3.25	3.37	3.62	4.46	4.87	3.50	3.00	2.50
8	2.50	2.75	3.00	3.08	3.75	3.42	3.62	4.62	4.96	3.67	2.92	2.50
9	2.42	2.66	5.12	3.08	3.54	3.42	3.58	4.71	4.79	3.58	2.92	2.50
10	2.42	2.66	4.75	3.08	3.33	3.50	3.83	4.83	4.62	3.62	2.83	2.50
11	2.42	2.66	3.87	3.08	3.29	3.62	3.83	5.46	4.42	3.54	2.83	2.42
12	2.42	2.66	3.33	3.00	3.17	3.33	4.21	5.87	4.58	3.50	2.83	2.42
13	2.42	2.79	3.04	2.92	3.17	3.33	4.29	5.71	4.87	3.50	2.83	2.42
14	2.50	2.83	3.17	3.00	3.17	3.25	4.67	5.46	4.87	3.42	2.83	2.42
15	2.50	2.75	3.08	3.00	3.17	3.33	4.96	5.33	4.79	3.42	2.83	2.42
16	2.75	2.66	3.12	3.08	3.17	3.33	5.04	5.25	4.70	3.42	2.83	2.33
17	2.75	2.50	3.17	3.00	3.25	3.33	5.04	4.92	4.96	3.42	2.83	2.33
18	2.50	2.50	3.20	3.00	3.17	3.29	5.17	4.92	5.21	3.30	2.83	2.33
19	2.50	2.50	3.08	3.00	3.17	3.25	5.37	4.92	5.08	3.16	2.83	2.33
20	2.50	2.42	3.08	3.00	3.25	3.25	5.54	4.83	4.96	3.17	2.75	2.33
21	2.50	2.42	3.00	3.00	3.25	3.17	5.58	4.66	4.96	3.08	2.75	2.33
22	2.50	5.25	2.92	3.08	3.17	3.17	4.96	4.50	4.70	3.08	2.75	2.33
23	2.50	4.08	2.11	3.08	3.17	3.17	5.00	4.50	4.58	3.08	2.75	2.33
24	2.54	3.50	2.11	3.08	3.25	3.17	5.25	4.50	4.33	3.00	2.58	2.33
25	2.87	4.33	2.83	3.00	3.33	3.17	5.83	4.50	4.25	3.00	2.58	2.33

Daily gage height, in feet, of San Joaquin River at Herndon, Cal., for 1891–1909—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897–98.												
26	3.08	3.92	2.83	3.00	3.37	3.25	6.17	4.75	4.25	3.00	2.58	2.33
27	3.08	4.54	2.83	3.00	3.50	3.25	6.13	5.33	4.29	3.00	2.58	2.46
28	3.00	3.48	3.17	3.00	3.25	3.25	6.04	5.25	4.46	3.00	2.58	4.12
29	2.92	3.04	3.08	3.08	.....	3.29	5.62	4.71	4.25	3.00	2.58	3.46
30	2.92	3.25	3.08	3.08	.....	3.33	5.25	4.62	4.00	2.92	2.58	3.37
31	2.92	.....	3.17	3.08	.....	3.33	.....	4.37	.....	3.00	2.58	.....
1898–99.												
1	3.17	2.58	2.50	2.67	3.17	3.25	4.71	4.29	5.63	5.08	3.33	2.67
2	3.17	2.58	2.83	2.67	3.17	3.25	4.58	4.38	5.63	4.96	3.25	2.67
3	3.08	2.58	2.83	2.67	3.17	3.25	4.42	4.25	5.42	5.00	3.25	2.67
4	3.04	2.58	2.67	2.75	3.08	3.25	4.42	4.25	5.38	4.96	3.25	2.67
5	2.92	2.58	2.58	2.67	3.00	3.25	4.62	4.29	5.71	4.92	3.25	2.67
6	2.92	2.58	2.58	2.67	3.00	3.25	4.67	4.38	6.54	4.63	3.00	2.67
7	2.92	2.58	2.58	2.67	3.00	3.25	5.75	4.50	7.13	4.54	3.00	2.67
8	2.92	2.58	2.58	2.67	3.00	3.25	5.67	4.50	7.17	4.42	3.00	2.67
9	2.92	2.58	2.58	2.92	2.92	3.42	6.33	4.71	7.50	4.25	3.08	2.67
10	2.92	2.50	2.50	3.00	2.92	3.42	6.29	5.25	7.75	4.21	3.08	2.67
11	2.92	2.50	2.50	3.25	3.00	3.42	6.04	6.21	7.67	4.17	3.17	2.67
12	2.83	2.50	2.42	3.67	3.00	3.33	6.17	6.96	7.58	4.17	3.17	2.58
13	2.83	2.50	2.42	3.25	3.00	3.25	6.21	6.96	7.42	4.17	3.08	2.50
14	2.92	2.50	2.42	3.00	3.00	3.25	6.38	6.71	7.13	3.96	3.08	2.50
15	2.83	2.50	2.42	3.00	3.00	3.25	6.58	6.13	7.00	3.92	3.00	2.50
16	2.83	2.50	2.42	3.00	3.08	3.25	7.08	5.67	6.96	3.88	2.92	2.50
17	2.92	2.50	2.42	3.08	3.17	3.62	6.70	5.63	6.92	3.83	2.92	2.50
18	2.92	2.50	2.42	3.08	3.17	3.50	6.29	5.58	6.79	3.83	2.83	2.50
19	2.83	2.50	2.50	3.08	3.17	3.33	6.33	5.58	6.71	3.75	2.83	2.42
20	2.83	2.50	2.50	3.08	3.50	3.37	6.21	5.46	6.79	3.75	2.83	2.42
21	2.83	2.50	2.50	3.08	3.54	3.62	6.25	5.25	6.50	3.75	2.83	2.42
22	2.75	2.50	3.54	3.00	3.58	3.67	6.17	5.54	6.00	3.75	2.83	2.42
23	2.75	2.50	3.17	3.17	3.58	4.58	6.25	6.00	5.88	3.75	2.83	2.42
24	2.75	2.50	2.96	3.08	3.58	9.21	5.91	6.08	5.67	3.58	2.83	2.33
25	2.75	2.50	2.83	3.08	3.58	10.40	5.38	5.92	5.88	3.50	2.83	2.33
26	2.75	2.50	2.75	3.00	3.42	8.75	5.04	5.58	5.67	3.67	2.83	2.33
27	2.67	2.50	2.67	3.00	3.33	7.17	5.00	5.25	5.13	3.75	2.83	2.33
28	2.67	2.50	2.67	3.17	3.25	5.75	4.92	5.17	4.83	3.54	2.83	2.33
29	2.67	2.50	2.67	3.17	.....	5.62	4.88	5.17	4.96	3.50	2.75	2.33
30	2.58	2.50	2.67	3.17	.....	5.37	4.54	5.79	5.00	3.50	2.75	2.33
31	2.58	.....	2.67	3.17	.....	4.91	.....	5.38	.....	3.50	2.75	.....
1899–1900.												
1	2.33	2.75	3.00	4.8	3.3	3.2	4.8	4.5	7.2	5.3	3.0	2.6
2	2.33	2.70	3.00	4.7	3.2	3.3	4.6	4.5	7.3	5.0	3.0	2.5
3	2.33	2.63	3.00	9.3	3.3	3.3	4 4	4.5	7.1	4.9	3.0	2.5
4	2.33	2.67	3.00	10.2	3.3	3.6	4.6	4.5	7.0	4.4	3.0	2.5
5	2.33	2.67	3.00	5.8	3.1	4.9	4.4	4.8	6.9	4.3	3.0	2.4
6	2.33	2.67	3.00	4.9	3.1	3.6	4.4	5.1	6.8	4.2	3.0	2.4
7	2.33	2.58	2.75	4.5	3.0	3.1	4.3	5.1	7.4	4.2	2.9	2.5
8	2.25	2.58	2.75	4.2	3.0	3.1	4.1	5.3	7.5	4.2	2.8	2.5
9	2.25	2.58	2.75	4.1	3.0	3.1	4.4	5.4	7.6	4.3	2.8	2.5
10	2.25	2.50	2.75	3.9	3.0	3.1	4.2	6.1	7.4	4.3	2.8	2.5
11	2.25	3.50	2.75	3.1	3.0	4.0	4.4	6.3	6.9	4.1	2.8	2.4
12	2.25	3.25	2.67	3.1	3.0	4.0	4.2	6.3	6.6	4.0	2.7	2.4
13	2.33	3.58	3.00	3.7	3.0	4.1	4.2	5.8	6.3	4.0	2.7	2.4
14	2.42	3.67	2.87	3.7	3.0	4.4	4.2	5.3	6.3	4.0	2.7	2.4
15	2.42	3.50	3.20	3.7	3.0	4.7	4.2	5.2	6.1	3.9	2.7	2.4
16	2.58	3.29	6.00	3.7	3.0	4.7	4.2	6.2	5.8	3.8	2.7	2.4
17	2.58	3.63	5.12	3.7	3.0	4.6	4.1	7.2	5.5	3.8	2.7	2.4
18	2.58	3.50	4.16	3.7	2.9	4.6	4.0	7.1	5.7	3.7	2.7	2.4
19	2.66	3.29	4.10	3.7	3.2	4.6	4.1	7.9	5.8	3.6	2.6	2.4
20	2.66	3.17	3.91	3.7	3.3	4.6	4.6	7.6	5.7	3.6	2.6	2.3
21	2.66	3.17	3.83	3.7	3.3	4.6	4.9	7.4	6.5	3.5	2.6	2.3
22	2.75	3.17	3.67	3.5	3.3	4.6	4.8	7.7	6.4	3.5	2.6	2.3
23	3.33	3.33	3.54	3.5	3.1	4.6	4.7	8.0	6.2	3.5	2.6	2.3
24	3.33	3.21	3.33	3.4	3.0	4.4	4.5	7.5	5.9	3.5	2.6	2.3
25	3.00	3.17	3.33	3.2	3.0	4.3	4.5	7.1	5.9	3.2	2.6	2.3
26	3.00	3.25	3.25	3.3	3.0	4.3	4.5	7.1	5.7	3.2	2.6	2.3
27	2.96	3.08	3.25	3.2	3.0	4.3	4.5	7.4	5.5	3.1	2.6	2.3
28	2.86	3.08	3.25	3.3	3.0	4.3	4.3	7.3	5.6	3.1	2.6	2.3
29	2.80	3.00	3.25	3.3	.....	4.2	4.2	7.1	5.6	3.0	2.6	2.3
30	2.80	3.00	3.25	3.3	.....	4.3	4.2	7.2	5.4	3.0	2.6	2.4
31	2.75	.....	5.90	3.2	.....	4.4	.....	7.3	.....	3.0	2.6	.....

Daily gage height, in feet, of San Joaquin River at Herndon, Cal., for 1891–1909—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1900–1901.												
1	2.4	2.7	3.8	3.3	4.0	6.7	4.7	7.6	7.7	9.6	5.5	2.8
2	2.4	2.7	3.8	3.3	4.0	6.9	4.5	7.3	9.3	9.7	5.9	2.8
3	2.3	2.6	3.8	3.2	4.0	6.8	4.8	6.9	10.1	8.6	6.1	2.7
4	2.3	2.6	3.7	3.2	4.0	6.8	5.1	7.1	10.1	7.8	5.7	2.7
5	2.7	2.6	3.7	5.5	4.0	6.6	4.8	6.8	10.1	7.6	6.5	2.7
6	3.3	2.5	3.7	11.0	6.6	6.3	4.7	7.1	10.1	7.3	6.0	2.6
7	3.0	2.5	3.7	12.3	5.2	6.4	4.7	7.1	10.2	7.4	5.9	2.6
8	2.8	2.5	3.7	7.7	5.1	6.4	4.5	8.1	9.8	7.1	5.6	2.5
9	2.8	2.5	3.8	6.4	5.3	6.5	4.4	8.4	9.7	7.2	5.3	2.5
10	2.8	2.5	3.8	5.7	4.9	5.6	4.3	8.9	8.8	7.1	5.3	2.5
11	2.8	2.7	3.8	5.3	4.6	5.5	4.3	9.7	8.3	7.1	4.8	2.5
12	2.8	2.7	3.7	5.0	4.3	5.5	4.3	10.0	8.1	7.0	4.5	2.5
13	2.8	2.7	3.6	4.9	4.2	5.5	4.3	10.3	7.8	6.9	4.3	2.5
14	2.8	2.6	3.6	4.8	4.3	5.3	4.3	10.2	7.4	6.7	4.3	2.5
15	2.8	2.6	3.6	4.6	4.3	5.3	5.6	10.1	7.3	6.6	4.2	2.4
16	2.7	2.6	3.5	4.4	4.3	5.3	5.5	10.4	7.8	6.6	4.2	2.4
17	2.8	2.7	3.5	4.3	4.5	5.3	5.7	10.7	8.3	6.4	4.0	2.4
18	2.7	4.1	3.5	4.3	8.1	5.3	5.7	11.0	8.8	6.3	4.2	2.4
19	2.8	3.7	3.5	4.3	7.4	5.2	6.2	10.4	9.2	6.4	4.5	2.4
20	2.8	3.7	3.5	4.3	9.2	5.2	6.7	9.4	9.0	6.1	4.3	2.4
21	3.1	4.9	3.5	4.1	7.8	5.3	6.9	8.7	9.3	6.1	4.2	2.4
22	3.3	12.0	3.5	5.0	8.5	5.3	6.8	8.6	9.8	6.1	3.8	2.3
23	3.1	6.8	3.5	4.5	7.6	5.4	7.1	8.1	9.7	6.4	3.7	2.3
24	3.0	5.6	3.5	4.2	8.6	5.3	7.3	8.0	8.9	6.6	3.7	2.3
25	3.0	4.7	3.4	4.0	7.5	5.3	7.4	7.9	8.3	6.2	3.5	2.3
26	2.8	4.5	3.3	4.2	7.0	5.4	7.5	7.8	7.6	6.0	3.3	2.3
27	2.8	4.2	3.4	4.0	6.7	5.4	7.5	7.5	7.4	5.5	3.1	2.3
28	2.7	4.0	3.4	4.0	6.5	5.2	7.4	7.2	8.1	5.1	3.0	2.3
29	2.7	4.0	3.3	4.0	.....	5.0	6.9	6.9	8.6	5.1	3.0	2.3
30	2.6	3.8	3.3	4.0	.....	4.7	9.0	6.0	9.7	5.7	2.8	2.3
31	2.7	.....	3.3	4.0	.....	4.7	.....	7.3	.....	5.8	2.8	.....
1901–2.												
1	2.3	3.1	4.1	2.7	2.5	4.8	4.3	6.0	8.5	5.8	3.5	3.0
2	2.6	3.1	3.9	2.7	2.5	4.5	4.4	6.3	7.5	5.7	3.5	3.0
3	2.5	3.0	3.7	2.7	2.5	5.6	4.2	6.2	7.5	5.5	3.5	3.0
4	2.5	3.0	3.7	2.7	2.5	4.3	4.3	5.7	7.0	5.0	3.5	2.9
5	2.5	3.0	3.5	2.6	2.5	4.0	4.4	5.5	7.3	4.5	3.4	2.9
6	2.5	2.8	4.0	2.6	2.5	3.7	4.5	6.0	7.8	4.3	3.4	2.9
7	2.4	2.8	4.4	2.6	2.5	3.5	6.7	6.5	8.0	4.3	3.4	2.9
8	2.3	2.8	4.0	2.6	2.5	4.0	8.0	6.7	8.5	4.3	3.4	2.8
9	2.3	2.8	3.7	2.6	2.5	4.0	7.0	6.7	9.0	4.1	3.4	2.8
10	2.3	2.9	3.7	2.5	2.5	4.7	6.5	6.8	8.8	4.1	3.8	2.8
11	2.3	3.0	3.5	2.5	2.5	4.3	6.2	7.0	8.5	4.0	3.7	2.8
12	2.3	3.2	3.5	2.5	2.5	4.0	5.7	7.6	9.3	4.5	3.7	2.8
13	2.3	3.2	3.5	2.5	2.5	4.0	5.5	7.8	9.0	4.5	3.6	2.8
14	2.3	3.3	3.3	2.5	2.7	3.8	6.0	7.4	8.5	4.5	3.5	2.8
15	2.3	3.4	3.3	2.5	2.7	3.8	6.2	6.9	8.1	4.6	3.5	2.8
16	2.3	3.4	3.0	2.5	2.6	3.8	6.3	6.4	7.8	4.3	3.5	2.8
17	2.3	3.3	3.0	2.5	2.8	3.7	6.4	6.7	7.5	4.0	3.3	2.8
18	2.2	3.3	3.0	2.5	2.7	3.7	6.5	7.1	7.5	4.0	3.3	2.8
19	2.2	3.3	3.0	2.5	2.8	3.7	7.8	6.6	7.2	4.0	3.3	2.8
20	2.2	3.2	3.0	2.5	2.8	3.8	7.3	6.5	7.1	4.0	3.3	2.8
21	2.2	3.2	2.9	2.5	2.8	3.8	7.0	6.2	7.0	4.0	3.2	2.8
22	2.2	3.0	2.9	2.5	2.8	3.7	6.5	6.0	7.4	4.3	3.2	2.8
23	2.3	3.0	2.8	2.5	3.0	3.7	5.7	6.0	7.0	3.8	3.2	2.8
24	2.3	3.0	2.8	2.5	3.0	3.7	5.5	6.5	7.0	3.8	3.2	2.8
25	2.3	3.0	2.7	2.6	4.5	3.7	5.3	6.8	7.0	3.8	3.2	2.8
26	2.3	3.0	2.7	2.6	5.0	3.7	5.1	7.2	6.8	3.8	3.2	2.8
27	2.3	3.2	2.7	2.6	4.8	3.6	5.0	7.7	6.5	3.7	3.1	2.8
28	4.7	3.2	2.7	2.5	5.0	3.6	5.0	8.3	6.3	3.7	3.1	2.8
29	3.7	3.3	2.7	2.5	.....	3.6	5.0	8.3	6.0	3.6	3.0	2.8
30	3.3	4.0	2.7	2.5	.....	3.6	5.0	8.6	6.0	3.6	3.0	2.8
31	3.3	.....	2.7	2.5	.....	4.0	.....	8.8	.....	3.6	3.0	.....
1902–3.												
1	2.8	2.6	2.7	3.0	4.0	3.3	7.0	7.0	9.0	6.0	2.0	2.0
2	2.8	2.6	2.7	3.0	4.5	3.3	7.0	7.2	9.0	6.0	2.0	2.0
3	2.8	2.6	2.7	3.0	4.2	3.3	6.0	7.3	8.8	6.4	2.0	2.0
4	2.8	2.6	2.7	3.0	3.8	3.3	5.4	7.7	8.5	6.4	2.0	2.0
5	2.8	2.5	2.7	3.0	3.8	3.5	5.2	8.0	8.3	6.4	2.0	2.0

Daily gage height, in feet, of San Joaquin River at Herndon, Cal., for 1891–1909—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1902–3.												
6	2.7	2.5	2.6	3.0	3.7	3.5	5.0	7.6	8.3	4.5	2.0	2.0
7	2.7	2.5	2.6	3.0	3.6	3.4	5.0	8.2	8.5	4.5	2.0	2.0
8	2.7	2.5	2.6	3.0	3.5	3.4	5.0	8.3	8.0	4.0	2.0	2.0
9	2.7	2.5	2.6	2.9	3.7	3.4	5.0	8.8	7.8	4.0	2.0	2.0
10	2.7	2.5	2.6	2.9	3.8	3.4	5.8	9.0	7.7	4.0	2.0	2.0
11	2.7	4.3	3.3	2.9	3.7	3.4	6.2	9.5	8.2	4.0	2.0	2.0
12	2.7	3.8	4.0	2.9	3.5	3.3	5.4	10.0	7.8	4.0	2.0	2.0
13	2.7	3.7	3.5	2.9	3.5	3.3	5.0	10.0	7.2	4.0	2.0	2.0
14	2.7	3.4	3.3	2.9	3.5	3.3	5.0	9.7	7.0	4.0	2.0	2.0
15	2.6	3.3	3.3	2.9	3.5	3.3	4.8	9.2	7.0	4.0	2.0	2.0
16	2.6	3.2	3.3	2.8	3.5	3.3	4.7	8.8	6.8	4.0	2.0	2.0
17	3.6	3.1	3.3	2.8	3.5	3.5	4.5	8.2	6.4	4.0	2.0	2.0
18	2.6	2.8	3.3	2.8	3.5	3.6	4.2	8.0	6.0	3.5	2.0	2.0
19	2.6	2.8	3.3	2.8	3.5	3.6	4.2	7.0	6.2	3.5	2.0	2.0
20	2.5	2.8	3.3	2.8	3.5	3.6	4.2	6.8	6.2	3.5	2.0	2.0
21	2.5	2.8	3.3	2.8	3.5	3.5	4.2	6.5	6.3	3.5	2.0	2.0
22	2.5	2.8	3.3	2.8	3.4	3.5	4.2	6.5	6.7	3.5	2.0	2.0
23	2.5	2.8	3.2	2.8	3.4	3.5	5.5	6.0	6.5	2.5	2.0	2.0
24	2.5	2.8	3.2	2.8	3.3	3.7	6.2	5.8	6.5	2.8	2.0	2.0
25	2.5	2.8	3.2	2.8	3.3	4.1	6.5	5.7	6.6	2.2	2.0	2.0
26	2.5	2.8	3.2	2.8	3.3	4.5	6.8	5.5	6.5	2.0	2.0	2.0
27	2.8	2.7	3.0	3.2	3.3	4.5	6.5	5.5	6.5	2.0	2.0	2.0
28	2.8	2.7	3.0	10.0	3.3	4.2	6.0	5.8	6.8	2.0	2.0	2.0
29	2.7	2.7	3.0	6.0	.....	4.6	6.0	6.3	6.3	2.0	2.0	2.0
30	2.7	2.7	3.0	4.5	.....	5.0	6.0	8.0	6.0	2.0	2.0	2.0
31	2.7	.....	3.0	4.0	.....	5.8	.....	9.3	.....	2.0	2.0	.....
1903–4.												
1	2.0	2.0	2.3	2.2	2.2	4.0	5.3	5.5	8.5	6.0	4.2	3.2
2	2.2	2.0	2.3	2.2	2.2	4.0	5.3	5.4	8.5	6.0	4.0	3.2
3	2.0	2.0	2.3	2.2	2.2	4.0	5.0	5.2	10.0	5.8	4.0	3.2
4	2.0	2.0	2.2	2.2	2.2	4.0	5.0	5.2	9.5	5.8	4.2	3.2
5	2.0	2.0	2.2	2.2	2.2	4.0	5.0	6.0	8.8	5.6	4.2	3.2
6	2.0	2.0	2.2	2.2	2.2	4.0	5.0	6.5	9.0	5.5	4.2	3.0
7	2.0	2.0	2.2	2.2	2.2	4.0	5.2	6.7	8.8	5.5	4.2	3.0
8	2.0	2.0	2.1	2.2	2.2	4.0	5.5	9.0	8.0	5.5	4.2	3.0
9	2.0	2.0	2.1	2.2	2.2	4.2	6.2	8.8	7.7	5.5	4.2	3.0
10	2.0	2.2	2.1	2.2	2.2	4.2	6.8	9.0	7.5	5.2	4.3	3.0
11	2.0	2.2	2.1	2.2	2.2	6.5	7.0	9.5	7.5	5.1	4.3	3.0
12	2.0	2.1	2.1	2.2	2.2	6.8	7.2	9.7	7.5	5.0	4.1	3.0
13	2.0	2.0	2.1	2.2	2.2	6.3	7.2	10.0	7.7	5.0	4.0	2.8
14	2.0	2.0	2.1	2.2	2.2	4.5	7.3	11.2	8.0	5.0	4.0	2.8
15	2.0	2.3	2.1	2.2	2.2	4.2	7.3	11.0	7.8	5.0	4.0	2.8
16	2.0	2.2	2.1	2.2	2.3	4.2	6.8	10.7	8.0	5.0	4.0	2.8
17	2.0	2.2	2.1	2.2	5.5	4.2	6.5	10.5	7.8	5.0	4.0	2.8
18	2.0	2.2	2.1	2.2	4.0	5.0	6.3	10.2	7.5	5.0	4.0	2.8
19	2.0	2.2	2.1	2.2	3.0	4.7	6.3	9.5	7.4	5.0	4.0	2.8
20	2.0	2.2	2.1	2.5	3.2	8.5	7.3	8.5	7.2	5.0	4.0	2.8
21	2.0	2.2	2.1	2.5	3.2	6.5	6.5	8.8	7.0	5.0	3.8	2.8
22	2.0	2.4	2.1	2.4	3.2	6.0	6.3	9.3	7.0	4.8	3.7	2.8
23	2.0	2.5	2.1	2.3	3.5	5.5	6.3	10.2	7.0	4.6	3.7	2.8
24	2.0	2.4	2.1	2.3	6.0	5.3	5.5	11.0	6.7	5.0	3.6	2.8
25	2.0	2.4	2.1	2.3	6.3	5.0	6.5	10.5	6.5	5.0	3.6	5.0
26	2.0	2.4	2.1	2.3	5.8	5.0	5.5	9.5	6.2	5.0	3.5	6.8
27	2.0	2.3	2.1	2.3	6.0	4.8	5.3	8.6	6.0	5.0	3.3	5.0
28	2.0	2.3	2.1	2.2	5.3	5.0	5.3	8.5	6.0	4.7	3.3	4.8
29	2.0	2.3	2.1	2.2	4.3	8.0	5.5	9.0	6.0	4.6	3.3	4.0
30	2.0	2.3	2.1	2.2	.....	6.0	5.5	9.0	6.0	4.4	3.2	4.0
31	2.0	.....	2.1	2.2	.....	5.5	.....	8.7	.....	4.3	3.2	.....
1904–5.												
1	4.0	3.6	3.2	3.5	3.0	3.9	4.5	7.0	6.75	6.1	3.5	3.15
2	4.2	3.5	3.2	3.5	3.15	4.1	4.5	6.75	6.6	6.0	3.5	3.1
3	4.4	3.5	3.2	3.3	4.6	4.25	4.5	6.6	6.6	5.75	3.5	3.0
4	4.5	3.5	3.1	3.25	4.4	4.25	4.5	6.0	6.75	6.0	3.5	3.0
5	4.5	3.4	3.1	3.15	4.3	4.25	5.0	5.5	6.75	6.0	3.5	2.9
6	4.8	3.4	3.1	3.15	4.75	4.15	5.25	5.5	6.4	5.75	3.5	2.75
7	5.7	3.4	3.1	3.15	4.5	4.15	5.3	5.65	6.3	5.5	3.4	2.75
8	5.7	3.4	3.1	3.15	4.0	4.25	5.5	5.65	7.15	5.3	3.4	2.75
9	5.5	3.3	3.1	3.1	3.75	4.3	6.65	6.0	7.4	5.3	3.4	2.75
10	5.5	3.3	3.1	3.1	3.5	4.3	5.75	5.5	7.4	5.2	3.4	2.75

Daily gage height, in feet, of San Joaquin River at Herndon, Cal., for 1891–1909—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904–5.												
11	5.3	3.3	3.1	3.1	3.5	4.5	5.5	5.5	7.5	5.15	3.4	2.75
12	8.0	3.3	3.1	3.1	3.5	4.5	5.5	5.5	8.3	5.1	3.3	2.75
13	6.5	3.2	3.1	3.1	3.4	4.5	5.3	5.5	8.75	5.0	3.3	2.75
14	5.5	3.2	3.1	3.1	3.3	7.15	4.75	5.5	8.0	4.75	3.3	2.65
15	5.0	3.2	3.1	3.1	3.3	5.5	4.7	6.0	8.0	4.75	3.3	2.65
16	4.7	3.2	3.1	3.3	3.25	5.0	5.1	7.0	7.75	4.65	3.25	2.65
17	4.3	3.2	3.1	3.15	3.15	5.0	5.25	8.5	8.0	4.65	3.25	2.65
18	4.3	3.2	3.1	3.1	3.15	5.0	5.0	8.75	8.25	4.65	3.25	2.65
19	4.3	3.2	3.1	3.0	3.15	5.0	5.0	9.65	8.75	4.65	3.25	2.65
20	4.2	3.2	3.1	3.0	3.15	6.5	5.0	8.25	8.3	4.5	3.25	2.65
21	4.0	3.2	3.1	3.0	3.15	5.0	4.75	8.6	7.75	4.5	3.25	2.65
22	4.0	3.2	3.1	3.0	3.15	5.0	5.0	8.25	8.0	4.5	3.25	2.65
23	4.0	3.2	3.1	3.0	3.15	5.0	5.0	8.3	7.5	4.5	3.15	2.65
24	4.0	3.2	3.1	3.0	3.15	5.0	5.0	8.1	7.15	4.3	3.15	2.6
25	4.0	3.2	3.0	3.0	3.15	5.0	5.0	8.25	6.5	4.3	3.15	2.6
26	4.0	3.2	3.0	3.0	3.15	5.0	5.5	8.5	6.65	4.3	3.15	2.6
27	3.9	3.2	3.0	3.0	3.15	5.25	5.5	8.3	6.5	4.25	3.15	2.6
28	3.9	3.2	3.0	3.0	3.15	5.0	6.0	7.65	6.5	4.0	3.15	2.6
29	3.8	3.2	3.0	3.0	.....	5.0	6.0	7.65	6.5	3.75	3.15	2.6
30	3.8	3.2	3.0	3.0	.....	4.75	6.15	6.6	6.6	3.6	3.15	2.6
31	3.7	.....	3.2	3.0	.....	4.7	.....	6.75	.....	3.6	3.15	.....
1905–6.												
1	2.5	2.4	2.6	2.65	3.25	4.2	8.5	6.4	8.4	10.5	8.2	4.35
2	2.5	2.4	2.65	2.65	3.25	3.75	7.0	6.75	8.25	11.25	7.65	4.35
3	2.5	2.4	2.65	2.65	3.1	3.75	6.65	7.5	8.5	11.4	7.2	4.35
4	2.5	2.4	2.6	2.65	3.1	5.6	6.5	8.35	8.75	12.5	7.0	4.25
5	2.5	2.4	2.6	2.65	3.1	4.5	6.35	8.5	8.65	12.25	7.0	4.25
6	2.5	2.4	2.6	2.65	3.1	4.25	5.75	9.4	9.35	12.0	7.0	4.25
7	2.5	2.4	2.6	2.65	3.1	4.1	5.65	9.65	8.5	12.0	6.65	4.2
8	2.5	2.4	2.6	2.65	3.1	4.0	5.65	10.0	9.0	11.75	6.6	4.2
9	2.5	2.4	2.5	2.65	3.1	4.2	6.0	9.75	10.25	11.65	6.6	4.2
10	2.5	2.4	2.5	2.65	3.0	4.25	6.5	11.0	11.0	11.0	6.4	4.0
11	2.5	2.4	2.5	2.65	3.0	4.25	7.35	12.35	11.5	10.65	6.25	4.0
12	2.5	2.4	2.5	2.65	3.0	6.75	6.65	12.0	12.5	11.0	6.25	3.65
13	2.5	2.4	2.5	2.65	3.0	6.35	6.65	11.25	12.75	10.65	6.5	3.65
14	2.5	2.4	2.5	10.5	3.25	6.0	6.4	10.2	11.75	10.65	6.5	3.6
15	2.5	2.4	2.5	6.5	3.4	10.0	6.65	9.65	11.5	10.65	6.4	3.5
16	2.5	2.4	2.5	4.9	3.4	8.5	6.65	9.0	12.0	10.5	6.2	3.5
17	2.5	2.4	2.5	4.0	3.65	7.2	6.65	9.25	13.0	10.5	6.2	3.5
18	2.5	2.4	2.5	4.0	4.2	7.0	7.0	9.5	12.0	10.5	6.1	3.4
19	2.5	2.4	2.5	13.0	4.2	6.0	7.5	10.4	12.35	10.0	6.1	3.4
20	2.5	2.4	2.6	9.0	4.1	6.0	8.2	10.5	13.2	9.65	6.0	3.35
21	2.5	2.4	2.75	7.35	4.0	6.0	8.0	10.65	14.35	9.5	6.0	3.35
22	2.5	2.4	2.75	5.2	4.0	6.35	8.4	10.0	13.65	9.5	6.0	3.35
23	2.5	2.4	2.75	4.5	4.2	9.0	10.0	10.35	13.0	9.75	5.65	3.35
24	2.4	2.4	2.75	4.2	4.25	8.5	8.35	10.0	13.0	10.35	5.65	3.35
25	2.4	2.4	2.75	4.0	4.25	8.4	7.75	9.35	12.65	10.0	5.5	3.2
26	2.4	2.4	2.75	4.0	4.2	8.0	7.75	9.75	12.35	10.0	5.5	3.2
27	2.4	2.4	2.75	4.0	4.2	7.5	7.65	10.65	11.2	9.65	5.35	3.2
28	2.4	2.4	2.75	4.0	4.2	7.2	8.0	11.6	11.0	9.5	5.0	3.2
29	2.4	2.4	2.75	3.75	.....	6.5	7.75	10.35	10.35	9.0	4.65	3.2
30	2.4	2.4	2.75	3.5	.....	7.35	6.75	10.0	10.0	8.5	4.5	3.2
31	2.4	2.6	2.65	3.4	.....	8.25	.....	9.65	.....	8.25	4.5	.....
1906–7.												
1	3.2	3.0	2.6	3.65	5.5	4.75	6.65	9.65	11.25	10.25	6.6	3.25
2	3.2	3.0	2.6	3.65	5.35	4.65	7.0	9.5	11.35	9.5	6.75	3.25
3	3.2	3.0	2.6	4.0	5.1	4.6	7.5	9.5	11.75	9.65	6.65	3.15
4	3.2	3.0	2.5	4.15	5.0	4.6	7.5	9.35	11.6	10.9	6.65	3.0
5	3.2	3.0	2.5	4.15	5.0	4.75	7.6	8.65	11.35	10.5	6.25	3.0
6	3.2	3.0	2.5	4.35	4.85	7.65	7.35	8.35	11.0	9.75	6.0	3.0
7	3.1	3.0	2.5	4.5	4.85	6.4	7.15	8.0	9.9	9.85	5.9	3.0
8	3.1	3.0	2.5	4.65	4.75	6.4	7.4	7.65	9.0	9.35	5.9	3.0
9	3.1	3.0	2.5	5.0	4.75	6.15	7.65	8.25	8.9	9.1	5.75	3.0
10	3.1	3.0	2.5	5.0	4.65	7.35	8.15	8.5	9.6	8.65	5.5	3.0
11	3.1	3.0	2.5	4.5	4.75	8.5	9.0	8.65	9.9	8.5	5.5	3.0
12	3.1	3.0	2.5	4.35	5.0	8.35	9.25	9.0	9.35	8.15	5.15	3.0
13	3.1	3.0	3.0	4.35	5.0	7.25	9.0	8.5	8.5	8.75	5.1	3.0
14	3.1	3.0	3.5	4.35	5.0	6.5	9.5	8.0	8.25	8.5	5.0	3.0
15	3.1	3.0	3.25	4.35	5.0	5.65	9.35	8.0	7.65	8.1	5.0	3.0

Daily gage height, in feet, of San Joaquin River at Herndon, Cal., for 1891–1909—Con.

Day.	Oct.	Nov.	Dec	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.												
16	3.1	3.0	3.25	4.35	5.0	7.35	8.75	8.35	7.5	7.9	5.15	3.0
17	3.1	3.0	3.1	4.35	5.0	8.5	8.6	9.5	7.15	7.65	5.15	3.0
18	3.0	3.0	3.0	4.35	5.0	10.0	8.5	10.0	7.5	7.5	5.35	2.9
19	3.0	3.0	3.0	4.4	5.0	9.15	8.5	10.5	8.15	8.0	5.15	2.9
20	3.0	3.0	3.0	4.4	5.0	11.5	9.0	10.0	9.1	7.5	5.0	2.85
21	3.0	3.0	3.0	4.4	5.0	11.5	9.25	10.35	9.5	7.65	4.85	2.85
22	3.0	3.0	3.0	4.5	5.0	7.15	9.35	10.25	9.35	7.15	4.75	2.75
23	3.0	3.0	3.0	4.4	6.5	7.0	9.65	8.9	9.15	6.9	4.25	2.75
24	3.0	3.0	3.0	4.35	5.35	11.0	10.0	8.75	8.85	7.1	4.25	2.65
25	3.0	3.0	3.0	4.35	5.15	9.5	10.0	9.0	9.1	7.5	4.0	2.65
26	3.0	3.0	3.5	4.4	5.15	9.0	9.65	9.35	9.4	7.4	4.0	2.65
27	3.0	3.0	3.65	4.5	5.15	7.5	9.6	9.5	9.65	7.15	4.0	2.6
28	3.0	3.0	3.65	4.65	5.0	7.0	9.6	9.25	9.85	7.0	3.85	2.6
29	3.0	2.85	3.75	10.0	.....	6.35	9.5	10.5	9.75	7.0	3.85	2.6
30	3.0	2.6	3.75	7.35	.....	6.5	10.0	10.25	10.65	6.9	3.5	2.6
31	3.0	.....	3.75	5.5	.....	7.0	.....	11.15	.....	6.9	3.5	.....
1907–8.												
1	2.6	3.15	2.85	3.7	3.75	4.25	4.0	8.0	6.6	4.7	3.5	2.85
2	2.6	3.0	3.6	3.75	3.75	4.25	4.0	8.0	6.25	4.7	3.5	2.75
3	2.6	3.0	3.5	3.75	3.75	4.25	4.0	7.5	6.1	4.7	4.15	2.75
4	2.6	3.0	3.35	3.75	3.75	3.9	4.0	7.35	6.0	5.0	5.25	2.7
5	2.6	3.0	3.35	3.75	3.75	3.75	4.0	6.7	5.7	5.0	5.5	2.7
6	2.6	3.0	3.15	3.75	3.75	3.75	4.35	5.75	5.6	5.15	5.25	2.7
7	2.6	3.0	3.0	3.75	3.75	3.75	4.25	5.7	5.25	5.15	5.1	2.6
8	2.6	3.0	3.0	3.75	3.75	3.7	4.1	5.7	5.15	5.15	4.7	2.6
9	2.6	3.0	3.25	3.75	3.75	3.6	4.0	5.75	6.15	5.1	4.5	2.9
10	2.6	3.0	3.4	3.75	4.0	3.6	4.0	5.75	6.25	5.1	4.5	2.85
11	2.6	3.0	3.4	3.75	4.0	3.7	5.15	5.5	6.25	5.1	4.15	2.75
12	2.6	3.0	3.35	3.75	3.7	3.7	5.6	5.4	6.35	4.75	4.0	2.75
13	2.6	3.0	3.35	3.7	3.7	3.7	6.0	5.25	6.35	4.7	4.0	2.75
14	2.4	3.0	3.6	3.7	3.7	4.1	6.15	5.0	6.5	4.7	4.0	2.7
15	2.4	3.0	3.75	3.75	3.7	4.35	6.25	5.15	6.7	4.4	4.0	2.7
16	2.4	3.0	3.75	3.75	3.7	4.75	6.4	5.0	6.7	4.35	4.0	2.7
17	2.25	3.0	3.65	3.75	3.6	5.35	6.25	5.0	6.6	4.15	4.0	2.7
18	2.25	3.0	3.65	3.7	3.6	5.6	6.0	5.0	6.15	4.0	3.7	2.6
19	2.25	3.0	3.65	3.7	3.6	5.7	5.75	5.0	6.0	4.0	3.6	2.6
20	2.25	3.0	3.65	3.6	3.6	5.7	5.6	5.0	5.5	4.0	3.6	2.6
21	2.25	2.9	3.65	3.6	3.6	5.25	6.4	5.0	5.15	3.75	3.5	2.6
22	2.25	2.9	3.65	3.6	3.6	5.5	6.35	5.35	5.0	3.75	3.5	2.6
23	2.25	2.9	3.65	3.6	3.6	5.0	6.35	5.35	4.75	3.75	3.5	2.6
24	2.25	2.85	3.65	3.6	3.5	5.25	6.15	6.25	4.75	3.7	3.5	2.6
25	2.25	2.85	3.65	3.6	3.5	5.35	6.1	6.5	5.0	3.7	3.35	2.6
26	2.35	2.85	3.65	3.75	3.5	5.35	6.0	6.75	5.0	3.7	3.25	2.7
27	2.4	2.85	3.65	3.75	3.5	5.25	6.0	6.7	5.0	3.6	3.25	2.75
28	2.65	2.85	3.65	3.75	3.5	5.0	6.6	6.7	5.15	3.6	3.1	2.7
29	3.0	2.85	3.65	3.75	3.6	4.6	7.7	6.7	5.25	3.6	3.0	2.7
30	3.15	2.85	3.65	3.75	.....	4.5	8.0	6.5	5.4	3.5	3.0	2.7
31	3.15	.....	3.65	3.75	.....	4.15	.....	6.5	.....	3.5	3.0	.....
1908–9.												
1	2.6	2.5	2.35	2.35	4.6	4.65	4.25	9.0	11.0	10.0	4.4	3.35
2	2.6	2.5	2.35	2.35	4.5	4.4	4.25	9.5	12.15	9.65	4.35	3.35
3	2.6	2.5	2.35	2.35	4.6	4.25	4.35	10.5	13.25	9.65	4.35	3.35
4	2.6	2.5	2.35	2.35	4.6	4.0	5.75	10.35	13.35	9.5	4.25	3.35
5	2.5	2.5	2.35	2.35	4.5	5.5	5.65	10.25	13.0	8.65	4.25	3.25
6	2.5	2.5	2.35	2.35	4.6	5.5	6.0	10.25	12.25	8.5	4.15	3.25
7	2.5	2.5	2.35	3.15	6.0	5.35	5.35	10.5	11.65	8.4	4.15	3.25
8	2.5	2.5	2.35	4.0	5.65	5.0	5.4	10.5	10.5	7.6	4.0	3.25
9	2.5	2.5	2.35	3.6	5.4	4.85	5.4	10.6	10.35	7.35	4.0	3.25
10	2.5	2.4	2.35	5.35	5.25	4.75	6.0	10.35	10.5	7.25	4.0	3.25
11	2.5	2.4	2.35	4.0	7.65	4.75	6.4	10.0	10.75	7.1	4.0	3.25
12	2.5	2.4	2.35	3.65	11.0	4.65	6.65	9.35	11.0	7.0	4.0	3.25
13	2.5	2.4	2.35	3.5	9.6	4.6	6.5	9.15	10.35	7.0	4.0	3.25
14	2.5	2.4	2.35	13.35	8.25	4.6	6.5	8.5	10.5	7.5	4.0	3.25
15	2.5	2.35	2.35	10.0	7.0	4.35	7.35	8.25	10.5	7.25	4.0	3.25
16	2.5	2.35	2.35	8.15	7.0	4.15	8.5	8.0	9.65	7.0	4.0	3.25
17	2.6	2.35	2.35	7.65	7.0	5.0	8.5	7.25	9.35	7.0	3.75	3.25
18	2.6	2.35	2.35	7.1	6.35	4.85	8.65	7.5	9.0	6.65	3.65	3.1
19	2.6	2.35	2.35	6.5	6.0	4.65	9.0	8.0	9.0	6.5	3.65	3.1
20	2.7	2.35	2.35	6.15	5.65	4.5	9.0	8.35	8.65	6.5	3.65	3.1

Daily gage height, in feet, of San Joaquin River at Herndon, Cal., for 1891–1909—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908–9.												
21	2.6	2.35	2.35	9.0	5.65	4.5	8.35	9.0	8.4	6.25	3.65	3.1
22	2.6	2.35	2.35	13.0	5.35	4.4	8.0	9.35	8.15	6.1	3.6	3.1
23	2.6	2.35	2.35	7.15	5.0	4.4	7.65	9.0	10.15	5.9	3.6	3.0
24	2.6	2.35	2.35	7.0	5.0	4.4	7.6	8.5	10.65	6.0	3.5	3.0
25	2.6	2.35	2.35	6.5	5.0	4.35	7.75	8.0	11.0	6.0	3.5	3.0
26	2.5	2.35	2.35	5.75	5.0	4.35	7.35	8.35	11.15	5.65	3.5	3.0
27	2.5	2.35	2.35	5.4	5.0	4.35	9.0	9.35	10.4	5.65	3.5	3.0
28	2.5	2.35	2.35	5.25	5.0	4.35	9.0	9.35	9.25	5.5	3.4	3.0
29	2.5	2.35	2.35	5.1	.....	4.25	8.5	9.15	9.0	5.1	3.4	3.0
30	2.5	2.35	2.35	4.75	.....	4.25	8.35	9.0	10.15	5.0	3.35	3.0
31	2.5	.....	2.35	4.75	.....	4.25	.....	10.4	.....	4.6	3.35	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1909.				1909.			
1	3.0	3.0	5.0	16	3.0	2.65	4.75
2	3.0	2.85	5.0	17	3.0	2.65	4.5
3	3.0	2.85	5.0	18	3.0	2.65	4.15
4	3.0	2.75	5.35	19	3.0	2.75	4.15
5	3.0	2.75	5.25	20	3.0	2.85	4.0
6	3.0	2.65	5.0	21	3.0	2.85	4.0
7	3.0	2.65	5.5	22	3.0	3.1	4.0
8	3.0	2.65	5.65	23	3.0	4.5	3.75
9	3.0	2.65	13.5	24	3.0	4.35	3.65
10	3.0	2.6	9.65	25	3.0	4.25	3.65
11	3.0	2.6	7.5	26	3.0	6.75	3.65
12	3.0	2.65	5.75	27	3.0	5.6	3.5
13	3.0	2.75	5.5	28	3.0	5.35	3.5
14	3.0	2.75	5.35	29	3.0	5.1	3.4
15	3.0	2.75	5.0	30	3.0	5.1	3.4
				31	3.0	.....	3.6

Rating tables for San Joaquin River at Herndon, Cal.

1895.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
2.50	260	3.40	1,141	4.60	2,958	7.00	8,500
2.60	343	3.50	1,260	4.80	3,354	7.50	9,863
2.70	426	3.60	1,407	5.00	3,750	8.00	11,225
2.80	509	3.70	1,554	5.20	4,200	8.50	12,738
2.90	592	3.80	1,701	5.40	4,650	9.00	14,250
3.00	677	3.90	1,848	5.60	5,100	9.50	15,825
3.10	793	4.00	1,995	5.80	5,550	10.00	17,400
3.20	909	4.20	2,301	6.00	6,000	10.50	19,000
3.30	1,025	4.40	2,607	6.50	7,250	11.00	20,600

1896.

2.30	80	3.80	1,750	5.30	4,400	7.60	10,008
2.40	165	3.90	1,900	5.40	4,600	7.80	10,624
2.50	250	4.00	2,050	5.50	4,800	8.00	11,240
2.60	340	4.10	2,220	5.60	5,012	8.20	11,864
2.70	430	4.20	2,390	5.70	5,224	8.40	12,488
2.80	520	4.30	2,560	5.80	5,436	8.60	13,120
2.90	610	4.40	2,730	5.90	5,648	8.80	13,760
3.00	700	4.50	2,900	6.00	5,860	9.00	14,400
3.10	820	4.60	3,080	6.20	6,316	9.50	16,200
3.20	940	4.70	3,260	6.40	6,772	10.00	18,000
3.30	1,060	4.80	3,440	6.60	7,270	10.50	20,000
3.40	1,180	4.90	3,620	6.80	7,810	11.00	22,000
3.50	1,300	5.00	3,800	7.00	8,350		
3.60	1,450	5.10	4,000	7.20	8,890		
3.70	1,600	5.20	4,200	7.40	9,430		

Rating tables for San Joaquin River at Herndon, Cal.—Continued.

1897.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
2.30	90	2.50	150	2.70	370	2.90	590
2.40	120	2.60	260	2.80	480		

NOTE.—Above gage height 2.9 feet the table for 1897 is the same as the 1896 table.

1898.

2.40	240	3.20	814	4.00	1,730	5.60	4,576
2.50	290	3.30	916	4.20	2,034	5.80	5,028
2.60	350	3.40	1,018	4.40	2,338	6.00	5,480
2.70	410	3.50	1,120	4.60	2,660	6.20	5,968
2.80	470	3.60	1,242	4.80	3,000	6.40	6,456
2.90	530	3.70	1,364	5.00	3,340	6.60	6,944
3.00	610	3.80	1,486	5.20	3,744		
3.10	712	3.90	1,608	5.40	4,148		

1899–1900.

2.20	60	3.80	1,285	5.40	3,620	8.50	11,060
2.40	100	4.00	1,520	5.60	3,985	9.00	12,400
2.60	170	4.20	1,765	5.80	4,370	9.50	13,750
2.80	280	4.40	2,030	6.00	4,775	10.00	15,110
3.00	445	4.60	2,315	6.50	5,850	11.00	17,870
3.20	640	4.80	2,620	7.00	7,090	12.00	20,780
3.40	850	5.00	2,940	7.50	8,410		
3.60	1,060	5.20	3,275	8.00	9,730		

1901.

2.20	340	3.00	600	3.80	1,315	4.60	2,340
2.40	380	3.20	730	4.00	1,550	4.80	2,630
2.60	430	3.40	900	4.20	1,800	5.00	2,950
2.80	500	3.60	1,100	4.40	2,060	5.20	3,280

NOTE.—Above gage height 5.20 feet the rating table for 1901 is the same as the 1899–1900 table.

Monthly discharge of San Joaquin River at Herndon, Cal., for 1895–1901.

[Drainage area, 1,637 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1895.						
January	11,225	1,260	2,881	1.76	2.03	177,102
February	8,500	909	2,568	1.57	1.63	142,590
March	9,318	1,554	2,779	1.70	1.96	170,840
April	9,863	3,354	5,834	3.56	3.63	316,600
May	19,960	5,100	13,124	8.02	9.24	807,000
June	14,565	7,250	10,674	6.52	6.87	599,404
July	8,000	2,148	4,528	2.77	3.19	278,410
August	2,301	793	1,417	.866	1.00	87,104
September	8,500	260	1,085	.663	.74	64,567
The year						2,640,000
1895–96.						
October	1,260	260	420	.257	.30	25,846
November	426	260	362	.221	.25	25,562
December	677	260	373	.228	.26	22,905
January	12,800	250	2,119	1.29	1.49	130,335
February	1,750	950	1,177	.72	.77	67,696

Monthly discharge of San Joaquin River at Herndon, Cal., for 1895–1901—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1895–96.						
March	12,176	1,180	2,612	1.60	1.84	160,649
April	5,648	1,920	2,675	1.64	1.83	159,192
May	18,800	2,560	5,394	3.30	3.81	331,700
June	16,920	6,544	11,799	7.21	8.00	702,106
July	8,080	1,600	4,177	2.55	3.04	256,865
August	1,300	700	1,048	.64	.74	64,463
September	1,180	80	534	.33	.37	31,817
The year	18,800	80	2,724	1.66	22.70	1,980,000
1896–97.						
October	700	80	167	.10	.12	10,275
November	2,390	430	697	.43	.48	41,492
December	1,750	430	666	.41	.47	40,957
January	1,180	535	655	.40	.46	40,275
February	15,660	1,180	2,598	1.59	1.66	144,286
March	4,600	1,675	2,325	1.42	1.64	142,960
April	11,708	2,305	6,541	4.00	4.46	389,216
May	18,600	9,565	13,545	8.27	9.54	832,855
June	12,332	2,390	5,862	3.57	3.98	348,812
July	4,300	1,300	2,493	1.52	1.75	153,290
August	1,300	590	898	.55	.63	55,216
September	535	105	227	.14	.16	13,507
The year	18,600	80	3,056	1.87	25.35	2,210,000
1897–98.						
October	820	105	279	.17	.20	17,155
November	4,300	120	872	.53	.59	51,887
December	4,000	60	968	.59	.68	59,520
January	763	530	658	.40	.46	40,459
Februray	1,425	530	842	.51	.54	46,762
March	1,242	763	908	.56	.64	55,831
April	5,846	1,018	2,944	1.80	2.01	175,180
May	5,141	2,262	3,206	1.96	2.26	197,131
June	3,744	1,730	2,718	1.66	1.85	161,732
July	1,730	530	959	.59	.68	58,967
August	610	350	480	.29	.33	29,514
September	1,882	220	363	.22	.24	21,600
The year	5,846	60	1,267	.774	10.48	916,000
1898–99.						
October	763	350	509	.31	.36	31,297
November	350	290	308	.19	.21	18,327
December	1,181	240	384	.24	.26	23,611
January	1,170	170	463	.28	.32	28,469
February	1,060	350	645	.39	.41	35,821
March	16,206	692	2,689	1.64	1.89	165,341
April	7,354	2,030	4,233	2.59	2.88	251,880
May	7,090	1,830	3,730	2.28	2.63	229,350
June	9,070	2,620	5,700	3.48	3.88	339,173
July	3,105	955	1,664	1.02	1.18	104,284
August	745	250	428	.26	.30	26,317
September	220	70	152	.09	.10	9,045
The year	16,206	70	1,742	1.06	14.42	1,260,000
1899–1900.						
October	776	69	214	.13	.15	13,158
November	1,175	130	565	.34	.39	33,620
December	4,775	220	1,018	.62	.71	62,595
January	15,932	745	2,244	1.37	1.58	137,978
February	745	350	534	.33	.34	29,657
March	2,780	640	1,748	1.07	1.23	107,480
April	2,780	1,520	2,060	1.26	1.41	122,578
May	9,730	2,170	5,725	3.50	4.04	352,016
June	8,674	3,620	5,728	3.50	3.90	340,840
July	3,445	630	1,642	1.00	1.15	100,962
August	630	240	390	.24	.28	23,980
September	240	180	204	.13	.14	12,139
The year	15,932	69	1,838	1.12	15.32	1,340,000

Monthly discharge of San Joaquin River at Herndon, Cal., for 1895–1901—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1900–1901.						
October	990	180	451	.28	.32	27,730
November	20,780	240	1,834	1.12	1.25	109,130
December	1,285	745	1,033	.63	.72	63,517
January	21,372	810	3,506	2.14	2.47	215,576
February	12,940	1,550	4,983	3.04	3.17	276,742
March	6,830	2,480	4,191	2.56	2.95	257,695
April	12,400	1,930	4,680	2.86	3.18	278,479
May	17,870	4,775	10,935	6.68	7.71	672,367
June	15,662	7,882	11,998	7.33	8.17	713,930
July	14,294	3,110	3,466	2.12	2.45	213,116
August	5,850	500	2,373	1.45	1.67	145,910
September	500	360	399	.24	.27	23,742
The year	21,372	180	4,154	2.54	34.33	3,000,000
1901.						
October	2,480	340	489	.30	.35	30,067
November	1,550	500	702	.43	.48	41,772
December	2,060	460	872	.53	.61	53,617
The period						125,000

SAN JOAQUIN RIVER NEAR NEWMAN, CAL.

This station, which is located at the drawbridge on the Hills Ferry road, in the SW. ¼ sec. 3, T. 7 S., R. 9 E., 300 feet below the mouth of Merced River and 3½ miles northeast of Newman, was established April 29, 1912.

The gage is a vertical staff fastened to the pier support of draw span.

The bed of the stream is composed of sand and probably shifts somewhat.

Discharge measurements are made from the drawbridge.

Water is diverted above the station for use in power development and in irrigation.

The station is maintained only during the low-water season.

Estimates of daily and monthly discharge are withheld until additional measurements can be made.

Record of gage heights and discharge measurements has been furnished through Frank Adams, irrigation manager, Office of Experiment Stations, United States Department of Agriculture.

Discharge measurements of San Joaquin River near Newman, Cal., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Apr. 30	Harry Barnes	1.87	491
May 16	....do	7.15	3,220
June 12	....do	12.40	7,150

Daily gage height, in feet, of San Joaquin River near Newman, Cal., for 1912.

Day.	Apr.	May.	June.	Day.	Apr.	May.	June.	Day.	Apr.	May.	June.
1	.....	2.22	9.90	11	.....	3.05	12.0	21	.....	9.00	9.10
2	.....	2.40	10.7	12	.....	3.18	12.25	22	.....	8.50	8.68
3	.....	2.50	11.35	13	.....	4.52	12.55	23	.....	8.20	8.30
4	.....	2.28	11.9	14	.....	5.30	12.75	24	.....	7.65	8.00
5	.....	2.10	12.2	15	.....	5.80	12.7	25	.....	7.02	7.65
6	.....	2.15	12.1	16	.....	7.05	12.35	26	.....	7.20	7.00
7	.....	2.45	12.15	17	.....	8.10	11.85	27	.....	7.10	6.15
8	.....	2.32	12.3	18	.....	8.70	11.15	28	.....	6.82	5.55
9	.....	2.60	12.25	19	.....	9.20	10.35	29	1.98	7.52	5.10
10	.....	2.95	12.2	20	.....	9.55	9.65	30	1.88	9.00	4.75
								31	.....	9.80	.....

TULARE LAKE IN KINGS COUNTY, CAL.

During 1906 and a part of 1907 a record of the stage of Tulare Lake was kept by means of a Government staff gage located near the entrance of Kings River near Lemoore, Cal., at the middle of sec. 4, T. 21 S., R. 20 E., M. D. B. and M. The zero of the gage was at an elevation of 175.1 feet above mean sea level, or 4 feet below the bottom of the lake (elevation 179.1 feet). On May 11, 1907, a staff gage was set near Corcoran, Cal., referred to the same datum and used until July 30, 1909.

On July 28, 1910, a vertical staff gage in two sections was installed on the section line just south of the corner to secs. 27, 28, 33, and 34, T. 20 S., R. 20 E., about 10 miles south of Lemoore near Stratford post office. The datum on this gage is 171 feet above sea level.

All published gage records have been reduced to show the actual depth of the water on the lowest point of the lake bed.

Below is the gage record, showing the actual depth of the water in the lowest point of the lake bed.

Daily gage height, in feet, of Tulare Lake in Kings County, Cal., for 1906–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906.												
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.1	12.4	12.1
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.2	12.6	12.0
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.3	12.6	12.0
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.4	12.6	12.0
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.5	12.6	11.9
6	.....	.....	.....	.....	.....	.....	.....	.....	7.6	10.6	12.6	11.9
7	.....	.....	.....	.....	.....	.....	.....	.....	7.7	10.7	12.7	11.8
8	.....	.....	.....	.....	.....	.....	.....	.....	7.8	10.8	12.7	11.8
9	.....	.....	.....	.....	.....	.....	.....	.....	7.9	10.9	12.7	11.8
10	.....	.....	.....	.....	.....	.....	.....	.....	8.0	11.0	12.6	11.7
11	.....	.....	.....	.....	.....	.....	.....	.....	8.0	11.1	12.6	11.7
12	.....	.....	.....	.....	.....	.....	.....	.....	8.1	11.2	12.6	11.7
13	.....	.....	.....	.....	.....	.....	.....	.....	8.1	11.4	12.6	11.7
14	.....	.....	.....	.....	.....	.....	.....	.....	8.2	11.5	12.5	11.7
15	.....	.....	.....	.....	.....	0.0	.....	.....	.....	11.6	12.4	11.6
16	.....	.....	.....	.....	.....	.....	.....	.....	8.4	11.6	12.4	11.6
17	.....	.....	.....	.....	.....	.....	.....	6.2	8.5	11.7	12.4	11.6
18	.....	.....	.....	.....	.....	.....	.....	.....	8.6	11.7	12.4	11.6
19	.....	.....	.....	.....	.....	.....	.....	.....	8.7	11.8	12.3	11.6
20	.....	.....	.....	.....	.....	.....	.....	.....	8.8	11.8	12.3	11.6

Daily gage height, in feet, of Tulare Lake in Kings County, Cal., for 1906–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906.												
21									8.8	11.9	12.3	11.6
22									9.0	12.0	12.2	11.5
23									9.1	12.0	12.2	11.5
24									9.2	12.0	12.2	11.5
25									9.3	12.0	12.2	11.5
26									9.4	12.1	12.2	11.5
27									9.6	12.1	12.2	11.5
28									9.8	12.1	12.1	11.5
29									9.9	12.2	12.1	11.4
30									10.0	12.2	12.1	11.4
31								7.3		12.3	12.1	
1906–7.												
1	11.4	10.9	10.6	10.8	11.0	11.3						
2	11.4	10.9	10.6	10.8	11.0	11.3						
3	11.4	10.9	10.6	10.8	11.0	11.3		13.0			13.7	
4	11.4	10.9	10.6	10.8	11.0	11.4	12.6					
5	11.3	10.9	10.6	10.8	11.0	11.4			13.8			
6	11.3	10.9	10.6	10.8	11.0	11.4	12.6					
7	11.3	10.9	10.6	10.8	11.0	11.4						
8	11.3	10.8	10.6	10.8	11.0	11.4						
9	11.3	10.8	10.6	10.8	11.0	11.4						
10	11.3	10.8	10.6	10.9	11.0			13.5			13.5	12.9
11	11.2	10.8	10.6	10.9	11.0			13.5				
12	11.2	10.8	10.6	10.9	11.0				13.9			
13	11.2	10.8	10.6	10.9	11.1		12.9					
14	11.2	10.8	10.6	10.9	11.1						13.4	12.8
15	11.2	10.8	10.6	10.9	11.1							
16	11.1	10.8	10.6	10.9	11.1	11.7						
17	11.1	10.8	10.7	10.9	11.1			13.6				
18	11.1	10.8	10.7	10.9	11.1			13.6				
19	11.1	10.8	10.7	10.9	11.2		13.0					
20	11.1	10.7	10.7	10.9	11.2							
21	11.0	10.7	10.7	10.9	11.2				14.0			12.6
22	11.0	10.7	10.7	10.9	11.2							
23	11.0	10.7	10.7	10.9	11.2	12.0						
24	11.0	10.7	10.7	10.9	11.2							
25	11.0	10.7	10.7	10.9	11.2			13.7				
26	11.0	10.7	10.7	10.9	11.2							
27	11.0	10.6	10.7	10.9	11.2		13.0					
28	11.0	10.6	10.8	10.9	11.3							
29	10.9	10.6	10.8	11.0								
30	10.9	10.6	10.8	11.0		12.4				13.8		
31	10.9		10.8	11.0				13.8				
1907–8.												
1												
2												
3												
4											9.9	
5												
6												
7												
8												
9												
10		12.4										
11	12.4								11.4			
12												
13								11.9				
14									11.2			
15												
16											9.6	
17												
18												
19												
20	12.4											
21										10.4		
22												
23												8.6
24												
25												

Daily gage height, in feet, of Tulare Lake in Kings County, Cal., for 1906–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907–8.												
26												
27												
28												
29												
30									10.9			
31	12.4											
1908–9.												
1	8.6			8.3					11.8			
2										13.2		
3												
4			8.3					11.05				
5												
6										13.25		
7	8.5											
8												
9								11.15				
10										13.3		
11							10.8	11.2	12.3			
12												
13												
14												
15												
16										13.4		
17								11.55				
18									12.65			
19												
20												
21										13.4		
22									12.9			
23							10.9					
24												
25								11.65	13.0			
26												
27												
28									13.1			
29												
30										13.3		
31												
1909–10.												
1											10.8	
2												
3												
4											10.8	
5												10.2
6												
7												
8												
9											10.65	
10												10.0
11												
12												
13											10.6	
14												
15												
16											10.5	9.95
17												
18												
19												
20											10.4	
21										11.1		
22												
23												
24											10.4	10.0
25												
26												
27												9.95
28								12.3		10.95	10.3	
29												
30												9.9
31												

Daily gage height, in feet, of Tulare Lake in Kings County, Cal., for 1906–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1			9.50	9.37					10.90			
2		9.60			9.55	9.90	10.65				11.68	
3												11.10
4	9.85			9.37						11.60		
5			9.40		9.85	10.50						
6		9.60					10.70	10.80	10.90		11.65	
7										11.70		
8	9.80		9.30	9.39								11.00
9					9.87	10.30						
10		9.55					10.90	10.80	10.89	11.75	11.65	
11												
12	9.75			9.39	10.10							
13												
14									11.25	11.75	11.50	11.80
15		9.55	9.25			10.50	10.80					
16	9.70			9.35	9.70			10.75				
17						10.52				11.75		10.75
18			9.40						11.35			
19		9.55				10.55					11.45	
20	9.65			9.35								
21			9.35		10.00		10.85	10.77		11.75		
22									11.35		11.35	10.70
23	9.60	9.55				10.55						
24												
25				9.35						11.73		
26	9.60				9.90				11.50		11.30	10.60
27		9.50	9.35			10.50	10.85	10.77				
28												
29				9.37					11.50	11.70		
30	9.60						10.80				11.20	10.57
31												
1911–12.												
1												
2						9.67						
3				9.96	10.00				8.75			
4	10.55	10.27										
5			10.10			9.75		9.30				
6					9.94		9.60					
7	10.55	10.27		9.97								
8												
9			10.10			9.78		9.20				
10				10.05	9.90				8.75			
11	10.50	10.25										
12			10.10			9.79		9.20				
13					9.90		9.56					
14		10.25		9.85								
15	10.40											
16			10.05	10.00		9.81			8.63			
17					9.70							
18	10.37	10.15										
19								8.90				
20			10.00	9.98	9.80							
21	10.35						9.50					
22		10.10										
23				9.90		9.80			8.40			
24	10.35		9.90		9.70							
25												
26		10.10				9.75		8.80				
27				9.95	9.70							
28	10.30		10.00				9.50					
29		10.10										
30				9.97		9.70			8.20			
31	10.30		10.00									

KERN RIVER AT KERNVILLE, CAL.

This station was originally located at Kernville. On August 25, 1907, after the Kern River power canal was completed, the station was moved downstream to a point below the intake of this canal in the SE. ¼ sec. 33, T. 25 S., R. 33 E. The discharge of the power canal is added to that determined at this station to give the total flow of the river at this point.

Several small ditches divert water for irrigation above the station.

The records of daily discharge for this station were furnished by the Kern River Power Co., through G. O. Newman, chief engineer.

Daily discharge, in second-feet, of Kern River at Kernville, Cal., for 1905–1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.									
1	125	246	343	550	1,200	.....	1,600	407	213
2	125	416	373	554	1,300	1,700	1,500	391	211
3	145	350	401	550	1,300	1,700	1,500	385	213
4	150	359	416	550	1,300	1,700	1,500	376	213
5	165	329	413	622	1,100	1,700	1,500	363	207
6	170	334	420	600	1,100	1,700	1,500	.....	205
7	190	299	447	600	1,100	1,700	1,000	313	207
8	190	277	440	600	1,100	1,700	1,000	308	211
9	190	279	442	600	1,100	1,750	1,000	305	211
10	195	274	437	600	1,100	1,750	1,000	313	208
11	200	269	428	600	1,100	1,800	900	315	207
12	200	259	440	600	957	2,000	900	320	205
13	195	237	.....	650	950	2,200	900	320	205
14	213	250	600	650	650	2,200	900	319	203
15	213	264	550	650	650	2,400	900	312	199
16	214	304	537	650	1,050	2,400	900	307	196
17	217	343	600	650	1,400	2,400	900	295	196
18	214	328	600	650	1,400	2,200	900	288	195
19	208	.....	600	650	1,750	2,200	700	279	194
20	213	308	600	800	1,800	2,200	650	269	190
21	250	293	550	800	1,800	2,300	600	270	188
22	267	293	550	800	1,900	2,400	550	268	183
23	228	291	550	800	1,900	2,400	530	266	182
24	237	298	550	800	1,900	2,400	530	256	189
25	237	208	550	800	1,900	2,400	520	247	200
26	223	328	550	800	1,900	2,300	530	245	198
27	.....	331	550	800	2,200	2,100	525	.....	194
28	224	338	550	800	1,800	2,000	505	231	190
29	221	.....	550	845	1,800	2,000	477	227	196
30	224	.....	552	1,200	1,600	2,000	442	222	203
31	224	.....	550	.....	1,800	.....	423	219	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905–6.												
1	207	184	268	215	359	519	1,190	2,240	3,200	4,550	2,900	1,180
2	213	185	238	160	377	507	1,370	2,040	3,200	5,150	2,700	1,150
3	187	185	267	183	404	497	1,340	1,580	3,120	5,450	2,550	1,130
4	183	184	269	253	418	544	1,340	1,600	8,190	5,400	2,550	1,100
5	179	185	267	255	423	513	1,060	1,620	3,920	5,450	2,400	1,050
6	174	185	257	228	426	534	1,190	1,640	3,780	5,500	2,400	1,000
7	174	185	252	204	442	517	1,210	1,630	3,220	5,500	2,350	926
8	176	189	248	200	436	534	1,240	2,540	3,240	5,250	2,400	876
9	176	194	228	196	437	534	1,100	3,140	3,420	5,300	2,350	851
10	174	194	239	199	439	544	1,190	2,780	3,650	4,900	2,250	801
11	171	194	238	201	442	561	1,190	3,120	3,920	4,750	2,250	776
12	170	194	239	201	428	672	1,190	3,140	4,350	4,800	2,150	751
13	171	192	248	323	399	1,124	1,200	2,960	4,550	4,650	2,000	726
14	171	188	247	3,000	405	450	1,200	3,100	3,880	4,530	1,850	726
15	174	186	251	2,000	477	.....	1,200	2,920	4,700	4,600	1,750	727

Daily discharge, in second-feet, of Kern River at Kernville, Cal., for 1905–1911—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905–6.												
16	174	186	245	1,000	527	2,500	1,150	2,960	4,850	4,550	1,600	651
17	174	224	239	547	487	2,000	1,290	3,010	4,850	4,530	1,650	641
18	176	226	241	467	477	1,720	1,320	2,980	4,770	4,250	1,700	626
19	180	211	241	1,000	482	600	1,320	3,090	5,000	4,400	1,650	601
20	.....	208	242	2,000	517	1,020	2,390	3,110	5,000	4,150	1,650	581
21	183	213	.....	947	517	986	2,390	3,130	5,000	4,050	1,650	571
22	181	194	.....	491	533	959	2,450	.....	5,750	3,850	1,650	571
23	187	198	192	466	507	987	2,500	3,160	5,550	4,530	1,530	577
24	189	208	174	445	492	1,020	2,500	3,120	5,450	4,250	1,400	571
25	188	213	176	432	493	1,140	2,500	3,020	5,400	4,150	1,400	581
26	188	221	183	432	487	1,130	2,530	4,040	4,800	4,150	1,380	576
27	189	225	187	421	507	1,440	2,530	3,440	4,600	3,850	1,320	576
28	187	277	180	401	520	850	2,540	3,840	4,400	3,950	1,320	561
29	.....	223	225	388	.....	1,340	2,540	3,400	4,420	3,750	1,300	561
30	185	245	233	372	.....	1,360	2,240	3,300	4,420	3,350	1,220	561
31	183	.....	203	368	.....	1,390	.....	3,170	.....	3,150	1,220	.....
1906–7.												
1	566	425	367	451	556	556	680	2,700	2,850	2,250	1,400	498
2	566	432	368	401	556	556	700	2,650	2,950	2,350	1,400	491
3	561	429	398	396	576	561	710	2,700	3,100	2,250	1,350	472
4	556	425	419	439	576	561	715	2,750	3,250	2,250	1,350	462
5	556	453	403	456	621	586	725	2,750	3,350	2,300	1,300	453
6	.....	448	407	461	626	586	730	2,500	3,400	2,450	1,200	441
7	526	418	404	453	611	571	750	2,450	3,200	2,500	1,150	423
8	519	425	403	434	616	571	900	2,300	3,150	2,550	1,100	415
9	507	422	651	463	611	576	1,050	2,200	3,200	2,500	1,060	403
10	500	413	485	482	606	566	1,050	2,100	3,050	2,350	961	399
11	496	407	464	468	606	576	1,750	2,150	2,950	2,250	911	402
12	491	404	463	453	601	576	2,050	2,150	2,900	2,200	811	408
13	489	399	501	444	591	571	2,050	2,050	2,850	2,150	761	415
14	475	401	444	463	586	566	2,750	2,000	2,750	2,100	712	411
15	470	395	415	441	581	.....	2,550	2,050	2,600	2,050	711	399
16	465	397	410	428	581	561	2,400	2,050	2,450	2,000	686	391
17	461	405	414	428	581	576	2,300	2,100	2,350	1,950	664	381
18	454	391	408	463	586	606	.....	2,150	2,250	1,900	654	374
19	452	381	406	439	576	606	.....	2,200	2,100	1,850	654	397
20	442	333	404	448	566	616	2,060	2,450	2,150	1,800	635	358
21	441	368	402	463	565	646	2,500	2,600	2,100	1,800	625	340
22	.....	382	399	468	626	631	2,850	2,750	2,300	1,700	615	334
23	432	378	403	468	606	626	2,850	2,800	2,350	1,650	606	327
24	.....	348	406	472	586	616	2,900	2,700	2,300	1,600	595	321
25	450	343	406	482	576	606	2,950	2,650	2,250	1,550	[a] 573	317
26	445	371	526	499	571	621	3,000	2,600	2,200	1,550	571	313
27	435	378	588	489	566	621	3,050	2,550	2,250	1,550	564	313
28	428	371	544	507	561	.....	3,000	2,500	2,200	1,500	549	312
29	428	368	526	596	.....	626	2,850	2,450	1,600	1,500	530	310
30	428	393	453	571	.....	640	2,800	2,500	2,100	1,450	512	316
31	423	.....	445	566	.....	665	.....	2,650	.....	1,400	518	.....
1907–8.												
1	.....	455	306	372	339	525	674	1,340	.....	699	602	253
2	329	444	302	365	345	467	623	1,790	1,200	680	602	253
3	328	432	302	379	360	467	599	1,940	1,090	699	669	275
4	316	418	299	350	415	448	593	1,890	1,050	699	716	265
5	316	406	297	.....	374	462	598	1,890	1,000	700	892	263
6	513	404	340	310	369	447	605	1,740	943	709	843	267
7	481	401	369	343	368	455	616	1,790	944	699	818	.....
8	462	395	418	345	384	447	606	1,840	843	680	767	341
9	442	387	389	343	360	430	606	1,740	843	660	634	389
10	423	387	384	345	413	438	614	1,540	843	639	622	360
11	410	374	413	332	374	448	636	1,390	996	629	602	.....
12	402	377	416	350	384	469	775	1,240	1,040	640	550	485
13	389	371	423	354	379	494	875	1,140	1,070	670	506	430
14	377	367	411	369	345	533	876	1,090	1,100	651	475	384
15	373	365	380	384	374	615	862	1,040	1,120	621	453	358
16	373	365	394	366	384	657	843	990	1,080	599	418	335
17	386	346	365	360	396	656	767	967	1,050	568	394	321
18	469	360	374	377	387	650	743	993	1,050	533	377	316
19	481	326	358	375	377	633	718	993	1,020	537	360	307
20	452	332	375	319	385	613	717	942	948	550	339	297

[a] Began gaging river below canal intake.

Daily discharge, in second-feet, of Kern River at Kernville, Cal., for 1905–1911—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907–8.												
21	450	356	.....	335	409	624	767	892	875	540	335	298
22	435	336	348	355	418	674	792	868	898	535	333	288
23	489	333	350	345	432	698	767	917	874	517	324	276
24	530	335	358	385	401	774	742	975	824	516	316	259
25	495	315	358	394	399	799	691	993	774	496	307	493
26	467	326	374	.....	455	874	718	1,140	751	477	295	558
27	487	326	399	374	501	850	743	1,340	775	481	.....	448
28	559	328	393	374	530	875	816	1,240	750	516	273	402
29	530	312	345	374	531	951	843	1,190	799	590	267	370
30	.....	315	358	345	.....	724	1,190	1,190	724	590	261	345
31	464	.....	397	364	.....	701	.....	1,350	.....	569	257	.....
1908–9.												
1	327	289	273	241	778	1,280	1,350	3,780	5,180	5,080	1,580	957
2	316	285	.....	247	757	1,310	1,510	4,080	5,680	5,180	1,480	931
3	307	278	281	314	758	1,190	1,600	4,280	6,780	5,580	1,380	857
4	306	274	287	276	756	1,380	1,770	4,480	8,170	6,180	1,220	782
5	315	269	287	263	809	1,280	1,770	4,780	8,780	5,580	1,180	1,030
6	309	269	297	265	757	1,480	1,620	5,280	7,880	4,580	1,180	682
7	298	264	271	460	957	1,490	1,670	5,380	7,780	4,080	1,180	731
8	290	261	259	358	2,500	1,190	1,770	5,280	7,380	3,680	1,180	675
9	278	258	268	355	1,500	1,390	1,880	5,080	7,280	3,480	1,130	632
10	273	255	263	465	1,200	1,230	2,030	5,080	7,080	3,180	1,080	626
11	267	255	250	381	1,500	1,280	1,930	4,980	7,180	2,980	1,030	621
12	267	253	251	350	1,470	1,230	1,830	4,780	7,180	3,080	980	596
13	267	251	243	1,490	2,270	1,330	1,820	4,380	7,480	3,180	930	596
14	267	251	251	10,400	2,010	1,280	1,930	4,080	7,480	3,080	880	561
15	265	249	269	3,490	1,870	1,330	2,380	3,780	7,280	3,080	830	536
16	267	246	251	1,960	1,570	1,430	2,680	4,080	7,380	2,780	780	516
17	392	247	241	1,230	1,670	1,380	2,930	4,180	7,080	2,580	736	502
18	391	243	223	1,260	1,770	1,480	3,380	4,280	6,580	2,480	830	492
19	360	242	213	865	1,970	1,480	3,280	4,280	6,080	2,280	931	481
20	345	236	233	815	1,870	1,480	3,080	4,480	5,580	2,180	982	475
21	352	225	261	4,560	2,370	1,430	2,980	4,380	4,780	2,180	981	467
22	331	313	251	7,450	2,070	1,380	2,880	4,480	4,380	2,180	981	458
23	328	271	247	4,450	1,770	1,430	2,680	4,380	4,580	2,180	981	442
24	321	283	249	3,050	1,670	1,330	2,480	4,280	4,980	2,280	932	442
25	329	273	249	2,360	1,570	1,330	2,880	4,180	5,480	2,180	880	441
26	326	252	244	2,060	1,370	1,380	2,980	4,180	5,580	2,180	806	438
27	317	293	243	1,360	1,420	1,380	3,280	4,380	5,080	2,180	731	434
28	315	266	243	1,050	1,200	1,330	3,280	4,080	5,480	2,180	681	433
29	310	259	241	857	.....	1,380	3,480	4,880	5,380	1,880	732	457
30	303	261	241	805	.....	1,330	3,680	4,980	5,080	1,780	1,080	443
31	297	.....	245	827	.....	1,280	.....	4,880	.....	1,680	982	.....
1909–10.												
1	433	372	491	.....	680	742	992	1,490	2,340	732	511	298
2	428	374	491	.....	655	792	1,040	1,490	2,290	707	488	286
3	482	365	767	.....	555	792	990	1,540	2,240	682	467	282
4	493	357	536	1,080	605	892	1,040	1,590	2,090	657	447	297
5	475	354	462	980	555	1,040	1,040	1,540	2,040	607	408	301
6	459	354	496	811	600	1,140	1,090	1,490	1,790	567	433	275
7	448	356	495	830	540	1,090	1,090	1,440	1,640	550	414	268
8	438	343	936	780	550	1,090	1,040	1,440	1,490	565	404	263
9	425	366	1,330	780	548	1,140	1,040	1,640	1,340	602	389	258
10	423	540	3,540	730	545	1,240	1,190	1,690	1,240	607	380	255
11	409	429	1,150	680	545	1,140	1,190	1,790	1,140	607	370	253
12	402	442	970	630	560	1,090	1,140	1,690	1,190	607	363	249
13	400	440	876	630	600	1,040	1,190	1,640	1,240	597	355	246
14	393	423	780	630	555	1,090	1,190	1,790	1,180	582	348	248
15	389	228	680	628	.....	1,140	1,190	1,790	1,180	574	345	278
16	390	399	630	583	574	1,090	1,290	1,940	1,130	569	335	380
17	390	443	630	558	574	1,040	1,300	1,940	1,080	540	326	452
18	389	438	605	558	594	1,040	1,390	1,790	932	597	322	394
19	383	446	595	583	.....	1,090	1,590	1,740	882	882	318	355
20	381	438	595	583	617	1,190	1,690	1,740	832	974	314	331
21	376	472	630	583	592	1,190	1,640	1,690	832	732	312	312
22	378	566	570	579	592	1,240	1,590	1,640	782	632	312	297
23	370	574	550	600	612	1,140	1,690	1,790	732	602	321	287
24	366	536	540	605	592	990	1,740	1,940	782	602	331	278
25	365	506	511	605	612	990	1,740	1,990	732	574	346	272

Daily discharge, in second-feet, of Kern River at Kernville, Cal., for 1905-1911—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-10.												
26	362	565	526	605	617	790	1,740	1,940	732	569	336	268
27	358	560	516	605	632	890	1,690	1,940	757	560	326	265
28	355	487	511	605	642	990	1,740	2,040	732	607	317	261
29	365	477	506	605	.....	942	1,590	2,090	732	602	312	257
30	380	501	501	605	.....	992	1,590	2,390	757	560	305	255
31	370	.....	536	605	.....	992	.....	2,290	.....	535	299	.....
1910-11.												
1	256	278	218	250	1,730	425	1,590	1,640	2,190	3,240	890	435
2	258	268	228	245	1,160	429	1,690	1,290	2,040	3,090	839	430
3	258	253	234	242	1,650	453	1,640	1,880	1,990	3,090	839	425
4	255	283	312	250	1,300	482	1,690	2,010	2,290	3,090	.....	419
5	256	288	303	253	831	508	1,640	3,230	2,440	3,090	739	406
6	251	278	266	250	896	498	1,980	2,240	2,640	3,090	739	397
7	223	263	278	250	726	483	1,780	2,090	2,990	3,090	689	388
8	221	258	275	243	901	645	1,690	2,240	2,990	3,090	639	380
9	217	253	270	247	583	740	1,290	2,240	2,990	3,240	639	369
10	217	251	274	326	568	889	1,690	2,240	2,990	3,090	639	363
11	217	253	291	419	551	.....	1,590	2,240	3,540	3,140	639	360
12	248	248	347	303	545	739	1,490	2,180	3,690	2,640	639	.....
13	288	247	303	312	501	689	1,490	2,240	4,890	2,640	614	349
14	283	257	280	307	573	689	1,490	2,190	4,590	2,640	614	341
15	288	257	265	293	510	689	1,490	2,140	4,190	2,840	604	335
16	341	253	263	293	487	689	1,490	2,050	4,590	3,090	.....	328
17	326	253	273	281	443	689	1,490	1,920	4,690	2,840	591	325
18	350	247	255	277	476	764	1,590	1,940	4,790	2,840	589	321
19	345	248	257	281	462	739	1,840	1,990	4,990	2,740	589	316
20	340	247	275	277	476	764	1,840	2,190	4,990	2,740	579	312
21	331	248	282	297	454	764	1,690	2,390	4,190	2,240	575	310
22	322	247	276	482	431	789	1,740	2,590	4,190	2,190	548	312
23	.....	247	275	406	430	839	1,840	2,990	3,690	1,990	537	364
24	263	258	.....	366	438	1,090	1,940	3,290	3,690	1,990	522	355
25	288	248	278	1,160	431	1,190	1,940	3,240	3,840	1,840	506	341
26	283	243	256	660	430	1,190	1,940	2,740	2,840	1,190	496	331
27	281	239	247	513	.....	1,190	2,090	2,640	3,240	1,090	487	323
28	278	236	.....	421	443	1,190	2,040	2,390	3,490	990	480	310
29	273	223	.....	795	.....	1,290	1,880	2,390	3,490	990	469	342
30	.....	227	.....	3,070	.....	1,490	1,790	2,290	3,490	890	456	555
31	260	.....	.....	4,780	.....	1,490	.....	2,190	.....	890	444	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	473	312	282	11	333	380	272	21	299	309	286
2	415	307	283	12	330	.....	266	22	300	307	247
3	392	308	280	13	325	295	262	23	299	302	250
4	380	299	283	14	321	321	257	24	299	289	289
5	354	302	281	15	317	319	262	25	297	293	260
6	358	301	274	16	309	331	267	26	295	295	228
7	356	298	304	17	304	326	271	27	296	293	226
8	343	289	279	18	302	312	273	28	303	289	259
9	337	293	265	19	300	.....	260	29	315	289	281
10	334	283	270	20	300	312	255	30	.....	285	253
								31	318	.....	227

NOTE.—Estimates of daily discharge furnished by the Kern River Power Co.

Monthly discharge of Kern River at Kernville, Cal., for 1905–1911.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1905.				
January	267	125	203	12,500
February	416	208	301	16,700
March	600	343	505	31,100
April	1,200	550	694	41,300
May	2,200	650	1,420	87,300
June	2,400	1,700	2,050	122,000
July	1,600	423	880	54,100
August	407	219	297	18,300
September	213	182	200	11,900
The period				395,000
1905–6.				
October	213	170	182	11,200
November	277	184	203	12,100
December	269	174	231	14,200
January	3,000	160	579	35,600
February	533	359	459	25,500
March	2,500	450	984	60,500
April	2,540	1,060	1,680	100,000
May	4,040	1,580	2,840	175,000
June	8,190	3,120	4,490	267,000
July	5,500	3,150	4,540	279,000
August	2,900	1,220	1,890	116,000
September	1,180	561	728	43,300
The year	8,190	160	1,570	1,140,000
1906–7.				
October	566	423	480	29,500
November	453	333	397	23,600
December	651	367	443	27,200
January	596	396	467	28,700
February	626	556	588	32,700
March	665	556	595	36,600
April	3,050	680	1,980	118,000
May	2,800	2,000	2,430	149,000
June	3,400	1,600	2,620	156,000
July	2,550	1,400	1,980	122,000
August	1,400	512	830	51,000
September	498	310	387	23,000
The year	3,400	310	1,100	797,000
1907–8.				
October	559	316	434	26,700
November	455	312	366	21,800
December	423	297	366	22,500
January	394	310	358	22,000
February	531	339	400	23,000
March	951	430	610	37,500
April	1,190	593	734	43,700
May	1,940	868	1,300	79,900
June		724	952	56,600
July	709	477	603	37,100
August	892	257	480	29,500
September	558	253	346	20,600
The year	1,940	253	579	421,000
1908–9.				
October	392	265	311	19,100
November	313	225	262	15,600
December	297	213	255	15,700
January	10,400	241	1,750	108,000
February	2,500	756	1,510	83,900
March	1,490	1,190	1,350	83,000
April	3,680	1,350	2,430	145,000
May	5,380	3,780	4,530	279,000
June	8,780	4,380	6,400	381,000
July	6,180	1,680	3,130	192,000
August	1,580	681	1,010	62,100
September	1,030	433	591	35,200
The year	10,400	213	1,960	1,420,000

Monthly discharge of Kern River at Kernville, Cal., for 1905–1911—Continued.

Month.	Discharge in second-feet.			Run-off (in acre-feet).
	Maximum.	Minimum.	Mean.	
1909–10.				
October	493	355	402	24,700
November	574	343	438	26,100
December	3,540	462	740	45,500
January	.....	558	763	46,900
February	680	540	590	32,800
March	1,240	742	1,030	63,300
April	1,740	992	1,350	80,300
May	2,390	1,440	1,770	109,000
June	2,340	732	1,230	73,200
July	974	535	625	38,400
August	511	299	331	20,400
September	453	246	291	17,300
The year	3,540	246	797	578,000
1910–11.				
October	350	217	277	17,000
November	288	223	253	15,100
December	347	218	269	16,500
January	4,780	242	598	36,800
February	1,730	430	674	37,400
March	1,490	425	817	50,200
April	2,090	1,290	1,710	102,000
May	3,290	1,290	2,300	141,000
June	4,990	1,990	3,560	212,000
July	3,240	890	2,440	150,000
August	890	444	613	37,700
September	555	310	363	21,600
The year	4,990	217	1,160	837,000
1911.				
October	473	295	330	20,300
November	380	283	306	18,200
December	304	226	265	16,300

NOTE.—Monthly discharges were computed by engineers of the United States Geological Survey. Discharge interpolated on the following days:

Jan. 27, Feb. 19, Mar. 13, June 1, Aug. 6, 27, Oct. 20, 29, and Dec. 21, 22, 1905; May 22, Oct. 6 and 22, 1906; Mar. 15–28, Apr. 18 and 19, 1907; Jan. 25, 26, June 1, Aug. 27, Sept. 7, 11, and Dec. 2, 1908; Feb. 15, 19, Oct. 23, 30, Dec. 24 and 28–31, 1910; Feb. 27, Mar. 11, Aug. 4, 16, Sept. 12, Oct. 30, Nov. 12 and 19, 1911.

Discharge estimated Mar. 15, 1906, Apr. 18–19, 1907, and Jan. 1–3, 1910, from the discharge at Bakersfield.

KERN RIVER AT ISABELLA, CAL.

This station was established October 5, 1910, at the wagon bridge about half a mile north of Isabella, in the SW. ¼ sec. 17, T. 26 S., R. 33 E.

Cowell Creek enters about 6 miles above and the South Fork joins the main river half a mile below the station. Several small canals take water for irrigation above Isabella. To determine the total discharge of the river it is necessary to add the flow of the Kern River Power Co.'s canal. The intake of this canal is one-fourth mile below Kernville and about 3½ miles above the station.

The gage is a vertical staff fastened to a large cottonwood tree on the left bank. Discharge measurements are made from the bridge 100 feet above the gage or by wading.

The right bank is high; the left bank is overflowed during extreme high water. The channel is composed of gravel and cobblestones and appears permanent.

This station is maintained in cooperation with the United States Forest Service.

Estimates of daily and monthly discharge are fairly good.

Discharge measurements of Kern River at Isabella, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-feet.*
Oct. 5	J. E. Stewart	0.70	[a] 1.0
Nov. 21	H. J. Tompkins	.74	5.1
1911.			
Feb. 7	.....do	1.55	133
Mar. 3	.....do	.80	10
Apr. 28	.....do	3.75	1,430
May 4	.....do	4.15	1,620
5	.....do	4.48	1,860
June 23	.....do	5.28	2,840
27	.....do	5.50	3,150
Sept. 11	.....do	.80	8.1
Nov. 17	.....do	.80	8.0
1912.			
Apr. 29	J. E. Stewart	.96	13
May 17	H. J. Tompkins	3.14	947

[a] Estimated.

Daily gage height, in feet, of Kern River at Isabella, Cal., for 1910–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1		0.8		0.7	1.9	0.9		3.5	3.9	6.0	2.3	0.9
2		.8		.7			3.4	3.6			2.3	.9
3						.9		3.8		5.8	2.2	
4					1.8		3.4	4.1		4.8	2.1	.9
5	0.7				1.8			4.5	4.9	5.0	2.0	.9
6	.7				1.6		3.7		5.0	4.8		.9
7					1.6				5.0	5.0	1.8	.9
8	.7	.8			1.5	1.25			4.7	4.9	1.5	.9
9		.8	0.7	.7	1.2	1.9	3.7				1.9	.9
10	.7					3.3		4.3		4.8	1.7	
11						2.4		4.1		4.4	1.8	.8
12		.8	.7		1.0			4.1		4.2	1.6	.8
13	.8	.8						4.3		4.0		.8
14	.8	.8	.7		.9			4.2		4.7	1.5	
15		.8						3.8		4.5	1.4	.8
16			.7		.9						1.2	.8
17		.8	.7		.9		3.8			4.9	1.1	
18				.8	.9					4.7	1.0	.8
19	1.0	.8	.7	.9	.9					4.7	.9	
20	1.0		.7							4.2		
21					.9	1.8		4.6		3.8	.9	
22	1.0			1.2				5.4		3.4	.9	
23	2.0	.8						5.2	5.3		.9	
24					.9		3.8	5.1	4.8	3.5	.9	
25		.8						5.0		3.0	.9	.8
26		.8				2.7	4.0	4.4	4.8	2.9	.9	.8
27					.9	2.8		4.2	5.25	2.8		.9
28	.8			.9			3.8		5.4	2.7	.9	
29	.8			4.1		2.8	3.6			2.6	.9	
30				3.7			3.6				.9	
31				6.8				3.9		2.5	.9	
1911–12.												
1						1.0						
2		.8	.6				.9					
3				1.8	1.8			1.0				
4												
5	.9	.8										

Daily gage height, in feet, of Kern River at Isabella, Cal., for 1910–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911–12.												
6	.9			1.8								
7	.9	.8										
8	.8											
9	.9					1.0	1.0					
10	.9	.8	.9	1.7								
11									5.0			
12		.9										
13					1.8							
14		.9		1.8								
15	.9					1.0						
16							1.0					
17		.8						3.2				
18			.8									
19		1.0		1.8								
20									4.0			
21								4.0				
22		1.0					1.0					
23												
24		.9										
25				1.8		1.2						
26	1.0	.9			1.8			4.0				
27	1.0	.9					.95					
28	1.1						1.0					
29		.9			1.8				.9			
30		.9				1.0	1.0					
31				1.8				2.0				

Daily discharge, in second-feet, of Kern River at Isabella, Cal., for 1910–11.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	4	8	6	4	238	17	900	1,100	1,410	3,860	391	17
2	4	8	6	4	227	17	1,020	1,170	1,500	3,720	391	17
3	4	8	6	4	216	17	1,020	1,330	1,800	3,570	351	17
4	4	8	6	4	205	30	1,020	1,580	2,150	2,280	312	17
5	4	8	5	4	205	60	1,140	1,960	2,390	2,500	274	17
6	4	8	5	4	144	80	1,250	2,200	2,500	2,280	240	17
7	4	8	5	4	144	90	1,250	2,200	2,500	2,500	205	17
8	4	8	5	4	117	64	1,250	2,200	2,170	2,390	117	17
9	4	8	4	4	55	238	1,250	2,000	2,000	2,340	238	17
10	4	8	4	4	46	950	1,260	1,760	2,500	2,280	174	12
11	5	8	4	5	36	433	1,270	1,580	3,000	1,860	205	8
12	7	8	4	5	27	300	1,280	1,580	3,500	1,670	144	8
13	8	8	4	6	22	230	1,290	1,760	3,380	1,500	130	8
14	8	8	4	6	17	170	1,300	1,670	3,300	2,170	117	8
15	18	8	4	7	17	120	1,310	1,330	3,200	1,960	93	8
16	18	8	4	7	17	100	1,320	1,240	3,380	2,180	55	8
17	18	8	4	8	17	110	1,330	1,150	3,500	2,390	40	8
18	18	8	4	8	17	120	1,330	1,230	3,430	2,170	27	8
19	27	8	4	17	17	140	1,330	1,400	3,370	2,170	17	8
20	27	8	4	17	17	160	1,330	1,650	3,300	1,670	17	8
21	27	8	4	17	17	205	1,330	2,060	3,180	1,330	17	8
22	27	8	4	55	17	260	1,330	3,000	3,050	1,020	17	8
23	274	8	4	50	17	340	1,330	2,740	2,870	1,060	17	8
24	27	8	4	45	17	440	1,330	2,620	2,280	1,100	17	8
25	27	8	4	35	17	510	1,420	2,500	2,280	750	17	8
26	27	8	4	30	17	574	1,500	1,860	2,280	686	17	8
27	27	7	4	25	17	628	1,550	1,670	2,800	628	17	17
28	8	7	4	17	17	628	1,330	1,570	3,000	574	17	17
29	8	7	4	1,580	.....	628	1,170	1,490	3,200	524	17	30
30	8	7	4	1,250	.....	700	1,170	1,440	3,500	500	17	50
31	8	.....	4	5,170	.....	800	.....	1,410	.....	477	17	.....

NOTE.—Daily discharge determined from a well-defined rating curve. Discharge interpolated or estimated, on days for which gage was not read, by means of the record of discharge at Bakersfield.

Daily discharge, in second-feet, of Kern River at Isabella, Cal., for 1910–11—Contd.

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	40	12	10	11	17	12	17	21	27	27	8
2	30	8	2	12	17	17	17	22	27	27	17
3	30	8	17	13	17	17	17	23	27	22	17
4	20	8	17	14	17	17	12	24	27	17	17
5	17	8	17	15	17	14	8	25	27	17	17
6	17	8	17	16	17	11	8	26	27	17	17
7	17	8	17	17	17	8	8	27	27	17	27
8	8	8	17	18	17	18	8	28	40	17	27
9	17	8	17	19	17	27	8	29	27	17	27
10	17	8	17	20	17	27	8	30	17	17	27
								31	17	.....	27

Monthly discharge of Kern River at Isabella, Cal., for 1910–11.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1910–11.					
October	274	4	21.4	1,320	C.
November	8	7	7.9	470	C.
December	6	4	4.4	271	D.
January	5,170	4	271	16,700	C.
February	238	17	69.2	3,840	B.
March	950	17	295	18,100	B.
April	1,550	900	1,260	75,000	B.
May	3,000	1,100	1,760	108,000	B.
June	3,500	1,410	2,760	164,000	B.
July	3,860	477	1,810	111,000	A.
August	391	17	120	7,380	B.
September	50	8	13.6	809	C.
The year	5,170	4	700	507,000	
1911.					
October	40	8	21.7	1,330	C.
November	27	8	14.9	887	C.
December	27	2	15.7	965	D.

KERN RIVER POWER CO.'S CANAL AT KERNVILLE, CAL.

The Kern River power canal diverts water from Kern River about half a mile below Kernville; it is about 10 miles long and is concrete lined, except where flume is required. The power house is located in the canyon at Borel, where the water is returned to the river. The power is transmitted to Los Angeles.

The gaging station, which is at the Beattie ranch, 1,000 feet below the intake of the canal and about three-fourths of a mile southwest of Kernville, was established January 1, 1910.

An automatic gage is fastened to the left bank at a short flume, and a vertical staff is located just below the flume in the concrete-lined section of the canal.

Discharge measurements are made in the flume at the automatic gage.

Results are considered excellent.

The records of daily discharge are furnished by G. O. Newman, chief engineer of the power company.

Discharge measurements of Kern River Power Co.'s canal at Kernville, Cal., 1910–11.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-ft.*
Oct. 5	Stewart and Tompkins	4.18	229
Nov. 21	Tompkins and Garlock	4.38	252
1911.			
Feb. 7	H. J. Tompkins	8.10	554
Mar. 3	.....do	7.00	448
Apr. 29	.....do	8.50	587
Sept. 14	.....do	5.95	338
Nov. 17	.....do	5.70	322

NOTE.—The above measurements were made by engineers of the United States Geological Survey. 1910 gage heights refer to the power company's gage. 1911 gage heights refer to a gage installed by the United States Geological Survey at a different datum. Measurements made by employees of the power company were not furnished for publication.

Daily discharge, in second-feet, of Kern River Power Co.'s canal at Kernville, Cal., for 1910–1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910.									
1	580	580	592	592	592	592	582	511	298
2	580	580	592	592	592	592	582	488	286
3	580	555	592	592	592	592	582	467	282
4	580	580	592	592	592	592	582	447	297
5	580	555	592	592	592	592	582	408	301
6	511	548	341	592	592	592	567	433	275
7	580	540	592	592	592	592	550	414	268
8	580	550	592	592	592	592	565	404	263
9	580	548	592	592	592	592	582	389	258
10	580	545	592	592	592	592	582	380	255
11	580	545	592	592	592	592	582	370	253
12	580	560	592	592	592	592	582	363	249
13	580	558	592	592	592	592	582	355	246
14	580	555	592	592	592	580	582	348	248
15	453	564	592	592	592	582	574	345	278
16	433	574	592	592	592	582	569	335	380
17	433	574	592	592	592	582	540	326	453
18	433	574	592	592	592	582	582	322	394
19	433	580	592	592	592	582	582	318	355
20	433	586	592	592	592	582	574	314	331
21	433	592	592	592	592	582	582	312	312
22	579	592	592	592	592	582	582	312	297
23	580	592	592	592	592	582	582	321	287
24	580	592	592	592	592	582	582	331	278
25	580	592	592	592	592	582	574	346	272
26	580	592	592	592	592	582	569	336	268
27	580	592	592	592	592	582	560	326	265
28	580	592	592	592	592	582	582	317	261
29	580	.....	592	592	592	582	582	312	257
30	580	.....	592	592	592	582	560	305	255
31	580	.....	592	.....	592	.....	555	299	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	256	278	218	250	573	425	589	589	589	589	589	435
2	258	268	228	245	440	429	589	589	589	589	589	430
3	258	253	234	242	573	453	589	589	589	589	589	425
4	255	283	312	250	573	482	589	589	589	589	589	419
5	256	288	303	253	573	508	589	589	589	589	589	406
6	251	278	266	250	573	498	589	589	589	589	589	397
7	223	263	278	250	573	483	589	589	589	589	589	388
8	221	258	275	243	573	545	589	589	589	589	589	380
9	217	253	270	247	573	590	589	589	589	589	589	369
10	217	251	274	326	568	589	589	589	589	589	589	363

Daily discharge, in second-feet, of Kern River Power Co.'s canal at Kernville, Cal., for 1910–1911—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
11	217	253	291	419	551	589	589	589	589	589	589	360
12	248	248	347	303	545	589	589	589	589	589	589	355
13	288	247	303	312	501	589	589	589	589	589	589	349
14	283	257	280	307	573	589	589	589	589	589	589	341
15	288	257	265	293	510	589	589	589	589	589	589	335
16	341	253	263	293	487	589	589	589	589	589	589	328
17	326	253	273	281	443	589	589	589	589	589	589	325
18	350	247	255	277	476	589	589	589	589	589	589	321
19	345	248	257	281	462	589	589	589	589	589	589	316
20	340	247	275	277	476	589	589	589	589	589	579	312
21	331	248	282	297	454	589	589	589	589	589	575	310
22	322	247	276	482	431	589	589	589	589	589	548	312
23	0	247	275	406	430	589	589	589	589	589	537	364
24	263	258	276	366	438	589	589	589	589	589	522	355
25	288	248	278	563	431	589	589	589	589	589	506	341
26	283	243	256	562	430	589	589	589	589	589	496	331
27	281	239	247	513	436	589	589	589	589	589	487	323
28	278	236	250	421	443	589	589	589	589	589	480	310
29	273	223	250	565	.....	589	589	589	589	589	469	342
30	266	227	250	573	.....	589	589	589	589	589	456	555
31	260	.....	250	582	.....	589	.....	589	.....	589	444	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	473	312	282	11	333	380	272	21	299	309	286
2	415	307	283	12	330	338	266	22	300	307	247
3	392	308	280	13	325	295	262	23	299	302	256
4	380	299	283	14	321	321	257	24	299	289	289
5	364	302	281	15	317	319	262	25	297	293	260
6	358	301	274	16	309	331	267	26	295	295	228
7	356	298	304	17	304	326	271	27	296	293	226
8	343	289	279	18	302	312	273	28	303	289	259
9	337	293	265	19	300	312	260	29	315	289	281
10	334	283	270	20	300	312	255	30	316	285	253
								31	318	.....	227

NOTE.—Daily discharge of the canal was furnished by the Kern River Power Co., except Jan. 1-3, 23, Feb. 6, 13, 15, 19, 20, Oct. 30, Dec. 24, 28-31, 1910; Feb. 27, Mar. 11, Aug. 16, Sept. 12, Oct. 30, Nov. 12 and 19, 1911, on which days the discharge was interpolated by engineers of the United States Geological Survey.

Monthly discharge of Kern River Power Co.'s canal at Kernville, Cal., for 1910–11.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910.				
January	580	433	545	33,500
February	592	540	571	31,700
March	592	341	584	35,900
April	592	592	592	35,200
May	592	592	592	36,400
June	592	580	586	34,900
July	582	540	575	35,400
August	511	299	363	22,300
September	453	246	291	17,300
The period	.....	.....	.....	283,000
1910–11.				
October	350	0	267	16,400
November	288	223	253	15,100
December	347	218	270	16,600
January	582	242	353	21,700
February	573	430	504	28,000
March	590	425	560	34,400
April	589	589	589	35,000

Monthly discharge of Kern River Power Co.'s canal at Kernville, Cal., for 1910–11—Con.

Month.	Discharge in second-feet.			Run-off (in acre-feet).
	Maximum	Minimum.	Mean.	
1910–11.				
May	589	589	589	36,200
June	589	589	589	35,000
July	589	589	589	36,200
August	589	444	558	34,300
September	555	310	363	21,600
The year	590	0	457	330,000
1911.				
October	473	295	320	19,700
November	380	283	306	18,200
December	304	226	266	16,400

NOTE.—Monthly values computed by engineers of the United States Geological Survey from record of daily discharge furnished by the Kern River Power Co.

Combined daily discharge, in second-feet, of Kern River and Kern River Power Co.'s canal near Isabella, Cal., for 1910–1911.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	260	286	224	254	811	442	1,490	1,690	2,000	4,450	980	452
2	262	276	234	249	667	446	1,610	1,760	2,090	4,310	980	447
3	262	261	240	246	789	470	1,610	1,920	2,390	4,160	940	442
4	259	291	318	254	778	512	1,610	2,170	2,740	2,870	901	436
5	260	296	308	257	778	568	1,730	2,550	2,980	3,090	863	423
6	255	286	271	254	717	578	1,840	2,790	3,090	2,870	829	414
7	227	271	283	254	717	573	1,840	2,790	3,090	3,090	794	405
8	225	266	280	247	690	609	1,840	2,790	2,760	2,980	706	397
9	221	261	274	251	628	828	1,840	2,590	2,590	2,930	827	386
10	221	259	278	330	614	1,540	1,850	2,350	3,090	2,870	763	375
11	222	261	295	424	587	1,020	1,860	2,170	3,590	2,450	794	368
12	255	256	351	308	572	889	1,870	2,170	4,090	2,260	733	363
13	296	255	307	318	523	819	1,880	2,350	3,970	2,090	719	357
14	291	265	284	313	590	759	1,890	2,260	3,890	2,760	706	349
15	306	265	269	300	527	709	1,900	1,920	3,790	2,550	682	343
16	359	261	267	300	504	689	1,910	1,830	3,970	2,770	644	336
17	344	261	277	289	460	699	1,920	1,740	4,090	2,980	629	333
18	368	255	259	285	493	709	1,920	1,820	4,020	2,760	616	329
19	372	256	261	298	479	729	1,920	1,990	3,960	2,760	606	324
20	367	255	279	294	493	749	1,920	2,240	3,890	2,260	596	320
21	358	256	286	314	471	794	1,920	2,650	3,770	1,920	592	318
22	349	255	280	537	448	849	1,920	3,590	3,640	1,610	565	320
23	274	255	279	456	447	929	1,920	3,330	3,460	1,650	554	372
24	290	266	280	411	455	1,030	1,920	3,210	2,870	1,690	539	363
25	315	256	282	598	448	1,100	2,010	3,090	2,870	1,340	523	349
26	310	251	260	592	447	1,160	2,090	2,450	2,870	1,280	513	339
27	308	246	251	538	453	1,220	2,140	2,260	3,390	1,220	504	340
28	286	243	254	438	460	1,220	1,920	2,160	3,590	1,160	597	327
29	281	230	254	2,140	.....	1,220	1,760	2,080	3,790	1,110	486	372
30	274	234	254	1,820	.....	1,290	1,760	2,030	4,090	1,090	473	605
31	268	.....	254	5,750	.....	1,390	.....	2,000	.....	1,070	461	.....

Combined daily discharge, in second-feet, of Kern River and Kern River Power Co.'s canal near Isabella, Cal., for 1910–1911—Continued.

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	513	324	292	11	350	392	289	21	326	336	294
2	445	315	285	12	347	355	283	22	327	334	264
3	422	316	297	13	342	312	279	23	326	324	273
4	400	307	300	14	338	338	269	24	326	306	306
5	381	310	298	15	334	333	270	25	324	310	277
6	375	309	291	16	326	342	275	26	322	312	245
7	373	306	321	17	321	334	279	27	323	310	253
8	351	297	296	18	319	330	281	28	343	306	286
9	354	301	282	19	317	339	268	29	342	306	308
10	351	291	287	20	317	339	263	30	333	302	280
								31	335	.....	254

Combined discharge of Kern River and Kern River Power Co.'s canal near Isabella, Cal., for 1910–1911.

[Drainage area, 1,220 square miles.]

Months.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1910–11.							
October	372	221	289	0.237	0.27	17,800	A.
November	296	230	261	.214	.24	15,500	A.
December	351	224	274	.225	.26	16,800	A.
January	5,750	246	623	.511	.59	38,300	B.
February	811	447	573	.470	.49	31,800	A.
March	1,540	442	856	.702	.81	52,600	A.
April	2,140	1,490	1,850	1.52	1.70	110,000	B.
May	3,590	1,690	2,350	1.93	2.22	144.000	B.
June	4,090	2,000	3,350	2.75	3.07	199,000	B.
July	4,450	1,070	2,400	1.97	2.27	148,000	A.
August	980	461	681	.558	.64	41,900	A.
September	605	318	377	.309	.34	22,400	A.
The year	5,750	221	1,160	.951	12.90	838,000	
1911.							
October	513	317	352	.289	.33	21,600	A.
November	392	291	321	.263	.29	19,100	A.
December	321	245	282	.231	.27	17,300	A.

KERN RIVER AT RIO BRAVO RANCH, CAL.

The following information regarding records of discharge of Kern River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

Kern River has been measured [by the State engineer] chiefly at the Rio Bravo ranch station, just below the point where the stream issues from the mountain canyon and above all diversion canals in the valley about 12 miles above Bakersfield. A continuous record of gage heights was kept at this station from 1879 to July, 1882. For this period the discharge has been calculated from a discharge rating curve; for the remainder of the period, 1878 to 1884, the discharge was determined from estimates of precipitation and relative discharge per square mile.

Monthly discharge of Kern River at Rio Bravo ranch, Kern County, Cal., for 1878–1884.

[Drainage area, 2,345 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.						
November			400	0.17	0.19	23,802
December			350	.15	.17	21,521
January	686	389	462	.20	.23	28,407
February	745	466	591	.25	.26	32,822
March	659	510	552	.24	.28	33,941
April	1,054	661	764	.33	.37	45,461
May	1,231	680	927	.40	.46	56,999
June	1,190	812	971	.41	.46	57,779
July	865	386	535	.23	.27	32,896
August	387	168	266	.11	.13	16,356
September	174	146	171	.07	.08	10,175
October	210	145	182	.08	.09	11,191
The year	1,231	145	514	.220	2.99	371,000
1879–80.						
November	325	184	261	.11	.12	15,531
December	650	280	356	.15	.17	21,890
January	410	315	354	.15	.17	21,767
February	380	315	370	.16	.17	21,283
March	385	349	389	.17	.20	23,919
April	3,320	395	1,557	.66	.74	92,648
May	3,560	1,615	2,659	1.13	1.30	163,496
June	4,070	2,740	3,317	1.41	1.57	197,375
July	3,140	1,550	2,196	.94	1.08	135,027
August	1,500	840	1,060	.45	.52	65,177
September	846	710	767	.33	.37	45,640
October	794	722	758	.32	.37	46,608
The year	4,070	184	1,170	.499	6.78	850,000
1880–81.						
November	830	695	767	.33	.37	45,640
December	1,480	790	1,063	.45	.52	65,361
January	1,640	950	1,078	.46	.53	66,284
February	2,970	1,430	1,773	.76	.79	98,467
March	2,100	1,400	1,570	.67	.77	96,536
April	2,612	2,100	2,288	.98	1.09	136,145
May	2,710	2,060	2,362	1.01	1.16	145,234
June	2,390	1,475	1,890	.81	.90	112,463
July	1,520	710	1,126	.48	.55	69,235
August	1,200	420	627	.27	.31	38,553
September	420	320	361	.15	.17	21,481
October	360	310	333	.14	.16	20,475
The year	2,970	310	1,270	.542	7.32	916,000
1881–82.						
November	360	300	337	.14	.16	20,053
December	410	320	350	.15	.17	21,521
January	380	310	335	.14	.16	20,598
February	510	360	395	.17	.18	21,937
March	1,260	440	600	.26	.30	36,893
April	1,670	920	1,174	.50	.56	69,858
May	2,000	1,420	1,670	.71	.82	102,684
June	1,990	900	1,306	.56	.62	77,712
July	1,110	450	726	.31	.36	44,640
August			330	.14	.16	20,291
September			330	.14	.16	19,636
October			330	.14	.16	20,291
The year	2,000	310	657	.280	3.81	476,000
1882–83.[a]						
November			280	.12	.13	16,661
December			280	.12	.14	17,217
January			280	.12	.14	17,217
February			350	.15	.16	19,438
March			700	.30	.35	43,041
April			1,170	.50	.56	69,620
May			1,410	.60	.69	86,697

[a] Estimated from run-off of neighboring streams and from previous measurements.

Monthly discharge of Kern River at Rio Bravo ranch, Kern County, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1882–83.[a]						
June			1,170	0.50	0.56	69,620
July			940	.40	.46	57,798
August			470	.20	.23	28,899
September			350	.15	.17	20,826
October			280	.12	.14	17,217
The year			640	.273	3.73	464,000
1883–84.[a]						
November			200	.09	.10	11,901
December			200	.09	.10	12,298
January			350	.15	.17	21,521
February			470	.20	.22	27,035
March			940	.40	.46	57,798
April			1,980	.84	.94	117,818
May			5,860	2.50	2.88	360,317
June			9,380	4.00	4.46	558,149
July			5,860	2.50	2.88	360,317
August			2,350	1.00	1.15	144,496
September			940	.40	.45	55,934
October			470	.20	.23	28,899
The year			2,410	1.03	14.04	1,760,000

[a] Estimated from run-off of neighboring streams and from previous measurements.

KERN RIVER NEAR BAKERSFIELD, CAL.

This station, which has been maintained by the Kern County Land Co. to furnish a basis for the equitable division of the water of Kern River between different appropriators, is located at the mouth of the lower canyon, about 5 miles northeast of Bakersfield, at what is known as the "first point of measurement," in sec. 2, T. 29 S., R. 28 E. It was established September 29, 1893, by Walter James, chief engineer of the Kern County Land Co.

No tributaries enter below the station and only a few unimportant ones for 50 miles above.

Water diverted for power development above the station is returned to the river. Except for local irrigation in the valleys around Kernville no water is diverted for irrigation above the station. Below the point of measurement, however, the total flow of the river, except at flood stages, is diverted by the Kern County Land Co. and the Miller & Lux interests, which own all the water rights on lower Kern River.

The gage height record is obtained by an automatic water-stage register. Discharge measurements are made from the footbridge near the gage.

Determinations of daily discharge are published as furnished by the Kern County Land Co. through its engineer, A. K. Warren. Frequent discharge measurements are made and the record is excellent.

Discharge measurements of Kern River near Bakersfield, Cal., in 1893–1902.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
1893.			
Apr. 19	Walter James		2,058
21	do		2,223
May 22	do		4,776
June 6	do		5,547
13	do		5,619
14	do		5,068
20	do		4,899
24	do		4,142
July 7	do		3,821
Sept. 29	do		486
Oct. 24	do		519
Nov. 7	do		519
20	do		467
1896.			
June 9	J. B. Lippincott		3,004
1898.			
Aug. 29	J. B. Lippincott		116
1899.			
Sept. 2	S. G. Bennett		99
1900.			
Aug. 30	A. K. Warren		103
1901.			
Sept. 22			258
1902.			
Oct. 7	L. M. Lawson		171

Daily discharge, in second-feet, of Kern River near Bakersfield, Cal., for 1896–1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1896.									
1	379	766	740	1,100	1,009	3,067	1,299	713	384
2	377	732	713	1,044	994	3,200	1,244	671	365
3	382	695	724	1,015	1,011	2,875	1,221	642	339
4	404	660	690	974	1,074	2,628	1,237	607	328
5	393	639	685	942	1,126	2,592	1,434	590	289
6	379	640	707	916	1,205	2,741	1,879	542	279
7	378	624	695	889	1,146	2,854	1,929	514	312
8	394	593	695	861	1,115	3,069	1,698	496	428
9	400	580	705	870	1,086	3,348	1,570	475	454
10	403	591	726	932	1,015	3,379	1,822	451	399
11	397	598	726	925	978	3,118	1,874	450	360
12	390	598	732	911	952	2,939	1,792	442	329
13	385	599	755	970	986	3,028	1,624	440	306
14	387	591	777	1,045	1,082	2,960	1,447	412	294
15	397	590	822	1,151	1,175	2,801	1,272	381	285
16	397	583	827	1,050	1,173	2,715	1,116	366	269
17	469	576	833	933	1,140	2,686	1,056	379	257
18	519	593	864	864	1,175	2,786	1,144	478	244
19	918	590	867	852	1,205	2,553	1,096	588	247
20	915	582	880	850	1,204	2,300	1,027	644	251
21	3,101	577	924	842	1,184	2,138	963	602	268
22	2,327	572	1,068	832	1,229	1,985	986	536	275
23	1,390	577	1,133	861	1,222	1,884	1,219	481	276
24	1,057	571	1,209	864	1,247	1,680	2,004	442	273
25	888	587	1,232	920	1,362	1,553	1,686	425	282
26	844	596	1,375	1,171	1,568	1,442	1,380	412	282
27	844	618	1,782	1,245	1,971	1,333	1,179	401	280
28	1,125	661	1,648	1,201	2,489	1,301	1,029	386	268
29	906	724	1,453	1,088	2,998	1,346	903	378	248
30	867	.....	1,295	1,055	3,283	1,369	830	364	237
31	757	.....	1,211	.....	3,042	.....	765	310	.....

Daily discharge, in second-feet, of Kern River near Bakersfield, Cal., for 1896–1911—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1896–97.												
1	241	397	320	386	1,458	777	1,251	4,163	4,045	1,347	631	341
2	240	384	319	355	2,065	846	1,238	4,185	3,638	1,387	606	345
3	241	384	335	319	1,310	787	1,141	4,187	3,428	1,442	606	344
4	246	364	350	314	963	782	1,130	4,536	3,312	1,439	607	347
5	247	349	357	338	822	714	1,274	4,857	3,308	1,311	600	347
6	250	338	365	357	1,292	694	1,516	4,948	3,352	1,260	575	342
7	251	333	370	351	1,169	857	1,816	4,845	3,387	1,175	536	330
8	236	328	351	352	978	849	2,025	4,658	3,260	1,072	507	309
9	228	316	325	361	791	789	2,141	4,504	3,087	1,002	525	297
10	232	321	320	365	660	818	2,354	4,425	3,062	958	511	288
11	239	347	338	367	632	837	2,580	4,505	2,890	957	493	287
12	243	406	320	357	606	827	2,811	4,567	2,600	1,010	457	294
13	243	385	332	360	605	789	3,116	4,577	2,540	1,055	438	295
14	241	380	387	363	562	763	3,376	4,610	2,527	1,142	424	297
15	238	380	386	369	534	756	3,564	4,531	2,413	1,156	412	295
16	239	365	369	370	532	741	3,822	4,482	1,189	1,151	417	290
17	238	351	370	357	544	780	3,953	4,355	1,853	1,108	423	285
18	250	349	342	337	609	780	4,216	4,252	1,617	1,045	448	278
19	247	341	332	327	678	855	4,217	4,338	1,492	988	438	272
20	254	345	330	318	619	936	3,973	4,470	1,423	947	424	268
21	268	349	342	324	635	906	3,681	4,617	1,374	868	440	269
22	262	354	353	336	626	843	3,526	4,815	1,351	868	467	273
23	258	356	339	343	573	831	3,412	5,066	1,393	840	459	280
24	265	355	342	353	573	850	3,212	5,227	1,403	782	423	286
25	268	374	241	363	617	921	3,140	5,083	1,433	740	393	288
26	265	387	342	372	684	1,079	3,368	4,802	1,431	710	386	286
27	302	351	347	369	749	1,256	3,585	4,614	1,386	688	391	279
28	364	326	362	392	771	1,298	3,865	4,548	1,368	679	396	281
29	403	299	378	452	.....	1,891	4,060	4,479	1,356	681	388	271
30	376	329	352	575	.....	1,471	4,056	4,407	1,349	674	368	274
31	393	.....	355	667	.....	1,291	.....	4,340	.....	658	350	.....
1897–98.												
1	288	391	382	381	332	435	390	877	608	399	132	115
2	297	377	393	379	346	414	385	790	645	365	134	117
3	310	357	388	392	357	430	400	711	662	330	125	111
4	312	348	342	388	376	436	401	678	597	308	127	108
5	303	345	332	384	344	422	381	670	563	303	131	108
6	290	338	348	388	355	402	414	632	597	304	133	107
7	293	340	352	381	639	418	474	580	634	325	136	108
8	297	346	368	381	764	427	465	613	641	341	139	105
9	297	345	733	391	569	434	451	659	635	319	131	102
10	303	322	680	368	483	458	488	712	613	288	125	101
11	309	329	564	354	469	479	552	839	575	284	122	100
12	303	339	509	356	454	448	593	921	543	262	124	97
13	299	340	474	355	433	406	601	904	508	257	120	94
14	315	336	476	379	436	388	632	928	513	252	126	89
15	380	330	483	376	434	373	667	874	554	275	126	85
16	392	321	446	386	426	373	698	889	556	267	128	91
17	377	303	405	373	429	381	718	837	593	248	125	93
18	368	302	397	359	434	374	755	807	621	238	120	95
19	360	306	401	348	430	364	804	781	599	229	117	99
20	353	312	406	356	418	333	879	723	592	205	117	100
21	341	317	358	365	415	335	944	657	554	197	120	98
22	334	328	344	347	407	348	816	611	532	189	117	97
23	346	417	358	340	395	332	777	620	520	188	111	100
24	366	415	387	357	377	323	821	638	519	184	110	99
25	394	436	403	342	392	338	996	635	488	162	107	102
26	382	441	408	347	455	355	1,108	613	411	155	104	116
27	372	402	399	350	428	348	1,233	720	423	157	93	135
28	387	403	387	337	436	341	1,237	818	420	151	97	175
29	386	392	386	342	.....	362	1,227	771	421	136	104	280
30	386	383	384	333	.....	379	995	675	405	131	110	243
31	390	.....	376	325	.....	383	.....	612	.....	131	115	.....
1898–99.												
1	220	136	195	196	289	303	678	759	929	859	235	100
2	203	141	198	195	300	305	621	712	1,009	856	229	101
3	191	152	195	224	307	314	612	652	944	857	208	101
4	190	158	192	240	288	320	604	633	964	811	207	103
5	181	166	192	214	279	306	624	649	1,007	776	196	105

Daily discharge, in second-feet, of Kern River near Bakersfield, Cal., for 1896–1911—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1898–99.												
6	177	173	191	212	275	304	700	659	1,066	763	191	108
7	173	181	192	208	274	309	768	682	1,361	719	196	115
8	165	175	191	213	264	308	855	680	1,560	679	190	115
9	156	163	184	229	264	313	925	623	1,631	622	186	108
10	156	161	179	253	274	311	1,014	588	1,770	563	184	103
11	157	158	174	308	276	299	988	649	1,926	516	173	101
12	152	158	160	346	273	272	926	850	2,072	499	170	98
13	155	158	154	300	277	267	973	1,102	1,994	280	163	105
14	156	158	163	284	281	258	968	1,258	1,756	468	155	110
15	154	152	176	277	293	253	1,010	1,225	1,568	450	150	110
16	156	149	189	281	299	261	1,049	1,051	1,550	439	147	113
17	157	154	192	285	301	262	1,132	959	1,570	446	147	113
18	157	159	189	292	300	268	1,098	913	1,550	389	142	115
19	156	167	197	296	306	264	1,070	890	1,561	360	135	109
20	152	173	198	286	325	283	1,042	852	1,514	363	135	106
21	148	184	209	278	340	319	1,037	809	1,367	349	132	103
22	147	182	264	269	359	323	1,091	794	1,218	338	130	100
23	147	177	268	276	361	323	1,114	806	1,160	312	131	96
24	148	188	230	281	359	398	1,104	907	1,149	295	132	97
25	149	186	213	282	340	2,927	972	970	1,135	289	123	100
26	151	178	214	275	324	3,115	884	923	1,082	292	119	104
27	151	171	217	266	310	1,605	771	863	948	309	114	110
28	145	167	214	269	310	1,105	951	819	848	290	108	109
29	140	173	213	274	.....	877	709	822	846	266	106	98
30	133	184	212	274	.....	797	718	885	863	255	106	93
31	132	.....	205	280	.....	722	.....	803	.....	239	102	.....
1899–1900.												
1	92	186	220	468	301	325	455	481	1,758	796	209	108
2	93	189	216	356	291	327	477	491	1,774	733	191	116
3	90	185	209	359	287	331	506	475	1,772	665	188	132
4	94	185	204	712	282	343	499	456	1,759	607	194	147
5	95	190	211	753	276	374	486	495	1,629	548	195	190
6	95	100	212	570	268	392	497	633	1,476	500	189	259
7	97	196	219	486	259	357	495	620	1,481	479	179	257
8	95	191	216	425	255	369	497	563	1,568	485	169	241
9	109	190	209	390	250	359	493	580	1,563	487	178	221
10	111	188	214	359	262	358	455	668	1,483	492	172	213
11	114	204	203	339	267	357	418	1,060	1,379	458	159	188
12	126	220	195	325	259	377	399	974	1,346	425	161	175
13	152	213	218	308	262	405	415	913	1,304	408	158	175
14	180	212	220	301	257	432	442	897	1,267	394	149	171
15	191	330	224	296	266	484	410	858	1,188	395	141	171
16	194	211	267	298	265	482	407	865	1,081	374	130	166
17	189	236	681	293	261	476	397	1,004	1,010	350	123	157
18	193	240	514	284	260	456	395	1,231	948	315	117	156
19	209	233	390	280	292	460	404	1,391	999	293	117	152
20	219	230	324	289	308	463	428	1,514	1,137	283	120	146
21	220	239	296	311	299	442	504	1,558	1,252	274	120	139
22	222	270	302	324	307	419	567	1,560	1,283	269	120	139
23	223	278	303	324	308	421	564	1,675	1,210	274	122	142
24	226	261	316	312	296	453	560	1,683	1,123	283	114	144
25	212	238	300	310	291	418	552	1,485	1,073	251	111	140
26	198	236	303	307	298	427	537	1,539	983	230	109	141
27	187	228	293	307	305	455	511	1,726	931	225	111	153
28	183	223	280	297	313	479	478	1,852	936	217	108	156
29	183	222	289	283	.....	472	454	1,733	924	213	103	151
30	188	222	284	274	.....	438	465	1,716	865	220	106	147
31	189	.....	318	290	.....	445	.....	1,736	.....	222	103	.....
1900–1901.												
1	145	167	430	283	388	1,416	877	2,522	2,617	3,611	1,145	512
2	142	170	420	270	370	1,496	844	2,284	3,194	3,338	1,201	503
3	142	173	410	242	358	1,585	856	2,125	3,646	2,950	1,308	492
4	148	172	405	239	371	1,598	902	2,118	3,940	2,637	1,436	480
5	147	184	405	317	378	1,543	855	2,182	4,170	2,474	1,602	461
6	155	181	410	389	457	1,549	831	2,334	4,141	2,445	1,605	433
7	164	177	423	862	472	1,578	808	2,498	4,179	2,488	1,503	404
8	165	174	415	1,531	431	1,596	774	2,699	4,212	2,461	1,260	377
9	157	174	415	871	435	1,554	726	2,962	4,145	2,301	1,136	362
10	153	176	412	644	433	1,441	686	3,231	3,857	2,108	1,062	363

Daily discharge, in second-feet, of Kern River near Bakersfield, Cal., for 1896–1911—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1900–1901.												
11	153	172	409	557	440	1,381	660	3,502	3,502	1,884	1,040	345
12	151	169	397	559	448	1,368	684	3,791	3,220	1,780	948	330
13	152	170	382	567	434	1,224	770	3,809	3,030	1,771	882	315
14	156	165	371	542	412	1,186	910	3,662	2,820	1,734	831	308
15	158	168	375	512	494	1,142	1,061	3,541	2,632	1,562	803	293
16	156	191	365	494	570	1,099	1,148	3,578	2,616	1,541	960	283
17	161	228	357	476	658	1,076	1,190	3,799	2,812	1,537	1,093	291
18	160	325	353	467	1,077	1,070	1,257	4,163	3,115	1,535	1,145	283
19	154	352	382	459	1,400	1,076	1,407	4,295	3,239	1,526	1,100	271
20	153	310	376	415	1,346	1,093	1,606	4,004	3,199	1,493	1,013	267
21	151	499	358	421	1,366	1,163	1,844	3,646	3,141	1,471	896	260
22	160	1,005	346	461	1,672	1,144	2,033	3,390	3,326	1,439	808	258
23	165	994	350	474	1,734	1,183	2,150	3,190	3,608	1,350	744	273
24	171	698	330	443	1,759	1,212	2,238	2,910	3,554	1,502	653	284
25	175	639	316	422	1,776	1,221	2,385	2,870	3,185	1,375	566	307
26	173	578	327	420	1,551	1,195	2,479	2,823	2,890	1,380	566	331
27	176	572	344	404	1,433	1,172	2,466	2,661	2,608	1,298	559	342
28	175	553	341	390	1,421	1,100	2,514	2,511	2,698	1,260	584	318
29	180	488	325	381	.....	1,055	2,509	2,365	3,002	1,244	526	307
30	175	454	307	389	.....	950	2,471	2,244	3,419	1,163	524	300
31	170	.....	299	390	.....	912	.....	2,292	.....	1,127	516	.....
1901–2.												
1	317	409	438	287	258	863	850	1,615	2,306	1,314	433	201
2	319	401	395	291	268	1,119	893	1,559	2,028	1,269	402	198
3	300	390	397	291	277	1,493	849	1,522	1,811	1,205	373	198
4	316	378	384	290	270	929	831	1,504	1,904	1,090	337	191
5	330	384	374	289	260	756	930	1,520	2,018	989	333	186
6	346	394	398	293	256	772	1,078	1,589	2,215	915	338	186
7	330	397	395	312	251	725	1,647	1,704	2,527	839	328	184
8	317	394	385	314	262	620	3,438	1,765	2,608	766	327	187
9	318	383	357	307	260	717	2,461	1,880	2,701	740	366	186
10	297	382	358	299	263	957	2,000	2,004	2,726	747	374	191
11	291	383	352	287	254	787	1,836	2,065	2,735	736	369	189
12	287	406	339	274	252	770	1,748	2,108	2,642	712	386	195
13	280	379	315	264	254	782	1,752	2,156	2,910	722	385	198
14	286	381	283	274	254	790	1,806	2,135	2,755	711	346	191
15	278	373	274	282	251	723	1,877	1,997	2,400	704	340	206
16	276	374	296	286	259	645	2,008	1,797	2,313	675	330	214
17	278	366	291	286	263	655	2,130	1,827	2,244	631	321	227
18	268	358	288	289	260	728	2,332	1,884	2,195	603	319	223
19	274	372	286	294	268	790	2,620	1,868	2,159	588	307	216
20	270	375	285	292	257	813	2,807	1,697	2,169	550	295	200
21	271	377	285	296	258	758	2,740	1,549	2,159	522	279	198
22	275	364	278	291	279	751	2,306	1,447	2,173	509	278	203
23	265	374	272	281	339	759	2,060	1,406	2,119	505	258	204
24	266	373	297	278	353	794	1,772	1,451	1,887	508	256	198
25	270	354	298	285	379	734	1,682	1,555	1,836	484	254	194
26	293	357	289	272	871	694	1,559	1,673	1,726	466	238	197
27	306	353	285	255	1,252	689	1,505	1,662	1,561	469	224	200
28	525	347	283	247	1,451	667	1,556	1,780	1,410	490	220	179
29	500	364	281	260	.....	681	1,536	2,120	1,431	501	223	176
30	456	367	280	259	.....	735	1,540	2,250	1,296	480	218	179
31	409	.....	284	250	.....	779	.....	2,320	.....	460	209	.....
1902–3.												
1	184	237	269	244	622	432	1,471	1,514	2,358	1,765	437	201
2	190	237	250	244	600	428	1,821	1,684	2,415	1,776	439	208
3	187	241	257	245	480	418	1,460	1,835	2,668	1,670	443	211
4	183	230	244	245	461	428	1,344	1,966	2,647	1,481	413	198
5	172	237	251	253	480	479	1,279	1,999	2,636	1,354	384	195
6	168	246	269	249	442	514	1,236	2,024	2,724	1,252	348	199
7	162	249	294	249	435	479	1,172	2,150	2,750	1,155	336	204
8	167	243	302	250	444	475	1,188	2,318	2,780	1,042	328	200
9	185	243	296	248	497	530	1,263	2,414	2,634	953	330	200
10	190	269	283	244	468	539	1,334	2,606	2,728	898	341	192
11	185	300	278	242	477	515	1,393	2,816	2,472	853	335	187
12	180	393	314	248	506	537	1,258	3,068	2,297	823	313	181
13	186	340	325	244	520	562	1,183	3,233	2,271	825	312	187
14	190	306	298	245	466	543	1,117	3,296	2,300	814	318	191
15	186	285	272	251	401	534	1,039	3,143	2,337	770	323	183

Daily discharge, in second-feet, of Kern River near Bakersfield, Cal., for 1896–1911—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1902–3.												
16	194	273	250	247	391	527	969	2,950	2,145	742	321	180
17	195	262	271	244	410	539	1,018	2,797	1,936	743	303	181
18	190	265	299	241	472	537	965	2,444	1,894	722	291	178
19	193	281	292	234	430	519	910	2,152	1,968	684	270	177
20	195	298	281	237	413	497	903	1,958	2,114	668	259	176
21	194	313	267	237	359	485	893	1,850	2,245	645	249	181
22	197	298	262	237	368	466	912	1,780	2,309	610	250	184
23	200	315	248	236	419	479	1,053	1,718	2,291	588	249	190
24	214	322	237	242	412	532	1,233	1,651	2,187	553	247	197
25	237	310	245	257	418	654	1,406	1,551	2,206	536	239	192
26	262	288	250	260	436	740	1,609	1,463	2,304	512	236	177
27	236	292	250	347	438	723	1,669	1,424	2,305	520	224	171
28	236	301	253	1,297	436	745	1,601	1,405	2,232	516	219	185
29	242	289	258	1,432	.....	805	1,395	1,474	2,115	490	214	202
30	236	277	242	766	.....	1,024	1,371	1,755	1,923	477	213	219
31	236	.....	245	641	.....	1,250	.....	2,161	.....	463	205	.....
1903–4.												
1	225	169	210	193	203	451	1,182	875	2,130	915	553	327
2	200	179	207	188	206	396	1,050	856	2,173	918	607	329
3	191	182	212	181	214	394	956	825	2,526	977	547	304
4	190	182	206	176	219	380	951	852	2,941	895	493	275
5	197	189	203	186	220	406	926	861	2,814	854	470	260
6	183	185	196	188	243	433	935	952	2,578	809	500	242
7	181	186	187	196	238	431	984	1,140	2,452	760	497	227
8	182	192	181	183	233	413	1,022	1,341	2,139	772	559	229
9	180	199	191	184	242	403	1,048	1,488	1,859	766	567	218
10	181	205	203	190	232	414	1,048	1,548	1,786	737	594	214
11	179	204	186	191	222	410	1,106	1,645	1,832	689	556	209
12	181	207	188	199	226	455	1,133	1,820	1,896	668	504	207
13	173	215	191	198	247	399	1,175	2,036	1,909	658	459	201
14	167	222	199	200	256	446	1,203	2,216	1,854	624	432	194
15	163	226	202	195	287	445	1,177	2,324	1,763	564	477	195
16	159	222	199	194	274	494	1,177	2,411	1,764	541	516	242
17	153	225	204	209	821	537	1,079	2,467	1,766	525	500	246
18	153	219	202	219	743	523	1,019	2,616	1,717	504	516	239
19	157	213	200	198	512	527	1,012	2,563	1,573	510	450	248
20	159	198	200	181	421	674	1,107	2,188	1,426	510	419	245
21	162	202	203	165	377	1,000	1,017	1,961	1,410	487	396	218
22	167	210	210	158	363	777	962	1,857	1,269	476	363	200
23	158	217	210	173	388	872	934	1,846	1,230	494	328	210
24	154	218	208	204	407	1,085	838	2,211	1,258	516	339	199
25	157	214	200	231	427	842	814	2,627	1,252	566	329	211
26	161	211	202	229	386	720	868	2,737	1,128	590	380	352
27	169	208	208	225	392	739	884	2,441	1,070	587	384	498
28	179	200	213	218	439	861	852	2,107	1,025	571	490	457
29	180	201	207	207	598	1,574	846	2,035	945	542	480	415
30	174	206	200	190	.....	1,759	849	2,111	899	520	413	405
31	170	.....	199	193	.....	1,408	.....	2,118	.....	483	366	.....
1904–5.												
1	415	317	263	280	305	435	799	1,700	1,953	1,520	427	233
2	421	316	265	285	326	458	848	1,713	1,979	1,422	413	229
3	420	326	260	272	435	480	934	1,743	1,932	1,313	403	224
4	421	335	255	278	486	500	997	1,633	1,931	1,226	394	213
5	431	330	269	290	517	512	1,047	1,542	1,919	1,215	376	216
6	466	322	246	281	503	530	1,070	1,517	1,879	1,218	362	215
7	506	319	228	269	452	545	1,103	1,453	1,997	1,171	345	217
8	561	297	211	272	391	593	1,138	1,531	2,154	1,157	356	220
9	568	291	221	270	364	616	1,185	1,461	2,150	1,115	358	218
10	595	285	231	276	365	609	1,119	1,418	2,066	1,130	351	207
11	569	277	232	280	351	613	1,186	1,367	2,200	1,125	349	202
12	575	274	230	272	338	631	1,180	1,300	2,567	1,092	349	208
13	602	272	230	266	334	785	1,052	1,298	2,923	1,038	352	218
14	551	274	240	246	317	1,154	971	1,317	2,978	958	352	225
15	528	279	240	255	317	974	952	1,425	3,039	886	345	221
16	498	276	234	255	361	996	991	1,649	2,933	799	338	218
17	490	277	228	260	398	1,143	995	1,949	2,948	748	327	215
18	433	270	225	269	434	1,140	1,052	2,312	2,747	717	319	215
19	394	271	225	277	417	1,009	1,121	2,359	2,569	665	318	208
20	378	266	225	273	413	1,309	1,058	2,528	2,555	628	308	203

Daily discharge, in second-feet, of Kern River near Bakersfield, Cal., for 1896-1911—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904–5.												
21	369	274	213	305	401	1,073	992	2,549	2,547	634	286	197
22	356	275	224	329	386	957	964	2,625	2,539	597	279	194
23	349	275	234	343	390	888	920	2,558	2,408	578	267	195
24	337	280	243	311	397	871	895	2,412	2,154	558	269	196
25	349	273	249	301	410	900	936	2,456	1,835	557	286	201
26	353	263	262	298	420	929	1,033	2,560	1,690	548	285	204
27	358	271	239	281	432	999	1,070	2,598	1,685	536	282	214
28	345	260	237	276	434	978	1,067	2,378	1,617	532	271	200
29	325	266	266	271	.....	919	1,157	2,120	1,584	520	270	205
30	314	263	255	276	.....	1,051	1,451	1,962	1,563	488	265	205
31	313	.....	295	284	.....	913	.....	1,930	.....	451	250	.....
1905–6.												
1	205	230	262	242	529	854	2,980	2,846	5,416	7,369	3,552	1,522
2	226	227	281	253	513	806	2,651	2,798	5,353	7,765	3,282	1,438
3	227	221	276	230	506	779	2,424	2,986	5,306	8,251	3,236	1,369
4	208	218	285	233	509	795	2,291	3,337	5,495	8,431	3,147	1,297
5	196	215	277	241	529	842	2,172	3,786	5,964	8,246	2,953	1,255
6	190	216	271	246	538	777	2,051	4,434	6,126	8,129	2,905	1,201
7	181	231	267	253	560	765	2,010	4,608	5,788	7,973	2,880	1,167
8	175	217	275	256	580	755	1,970	5,278	5,932	7,729	2,852	1,111
9	176	225	278	260	646	785	2,135	6,097	6,311	7,607	2,769	1,064
10	186	227	284	265	578	851	2,296	6,782	6,797	7,257	2,627	1,039
11	192	230	264	269	589	896	2,302	6,624	7,213	7,176	2,536	1,030
12	199	232	278	267	610	1,026	2,278	6,133	8,190	7,211	2,548	983
13	206	233	265	272	568	1,996	2,336	5,687	8,829	7,072	2,473	938
14	206	228	241	1,626	538	1,945	2,484	5,640	9,079	6,705	2,377	919
15	202	223	244	1,828	574	1,716	2,635	5,886	9,072	6,628	2,276	916
16	199	234	240	1,293	684	5,264	2,767	6,079	9,142	6,719	2,211	891
17	203	240	238	890	701	5,527	2,898	6,055	9,004	6,603	2,215	883
18	194	257	246	687	661	3,025	3,032	6,348	8,819	6,254	2,206	883
19	198	263	259	1,370	646	2,106	3,178	6,868	8,993	6,093	2,097	839
20	215	262	266	2,554	655	1,807	3,343	7,339	9,375	5,870	2,215	807
21	218	247	285	1,145	717	1,725	3,597	7,443	9,505	5,439	2,192	809
22	217	243	272	931	785	1,854	3,911	7,381	9,505	4,997	2,071	806
23	221	239	255	807	739	1,978	4,135	7,025	9,311	5,648	1,840	788
24	230	227	233	746	681	2,284	4,255	6,492	9,107	5,920	1,662	785
25	226	237	221	698	665	3,417	3,853	6,184	8,948	5,595	1,540	781
26	218	239	239	666	710	3,983	3,698	7,660	8,668	5,347	1,446	777
27	217	253	255	643	735	4,150	3,598	7,832	8,187	5,392	1,405	755
28	221	259	262	616	773	3,195	3,692	7,420	7,529	5,269	1,435	731
29	222	263	271	602	.....	2,701	3,347	6,825	7,143	4,659	1,467	715
30	224	245	255	551	.....	2,527	2,973	6,102	7,010	4,311	1,434	704
31	226	.....	257	548	.....	2,818	.....	5,646	.....	3,925	1,431	.....
1906–7.												
1	697	546	518	671	913	924	1,752	3,715	3,862	.....	.....	.....
2	705	570	517	616	888	916	1,819	3,537	3,853	.....	.....	.....
3	695	566	542	548	915	889	1,896	3,487	4,059	.....	.....	.....
4	677	554	575	587	994	890	1,851	3,517	4,250	.....	.....	.....
5	680	550	545	657	1,076	1,129	1,770	3,402	4,271	.....	.....	.....
6	687	580	506	672	1,110	1,564	1,744	3,194	3,913	.....	.....	.....
7	622	555	530	660	1,070	1,329	1,780	3,059	3,685	.....	.....	.....
8	618	528	552	641	1,061	1,198	1,965	2,998	3,541	.....	.....	.....
9	634	539	587	650	1,037	1,171	2,201	2,955	3,253	.....	.....	.....
10	639	516	676	699	1,013	1,114	2,465	3,032	3,087	.....	.....	.....
11	645	499	675	683	981	1,149	2,809	3,168	3,261	.....	.....	.....
12	647	502	654	652	875	1,169	3,228	3,338	3,420	.....	.....	.....
13	649	518	677	631	979	1,092	3,686	3,272	3,258	.....	.....	.....
14	631	520	653	649	988	1,022	4,131	2,985	2,779	.....	.....	.....
15	612	529	601	642	995	998	4,263	2,818	2,523	.....	.....	.....
16	613	514	589	658	1,003	1,003	3,821	2,855	2,329	.....	.....	.....
17	592	462	587	614	1,015	1,038	3,494	3,020	2,159	.....	.....	.....
18	564	446	584	631	1,028	1,327	3,535	3,157	2,088	.....	.....	.....
19	554	476	562	638	997	1,452	3,821	3,369	2,134	.....	.....	.....
20	555	468	556	606	971	1,746	4,058	3,693	2,389	.....	.....	.....
21	564	433	552	615	948	2,066	4,321	3,649	2,800	.....	.....	.....
22	560	450	560	627	1,094	1,940	4,373	3,487	2,938	.....	.....	.....
23	558	474	556	637	1,345	1,769	4,349	3,307	2,748	.....	.....	.....
24	564	462	550	638	1,194	1,659	4,437	3,143	2,607	.....	.....	.....
25	559	440	562	672	1,116	1,777	4,504	3,118	2,533	.....	.....	.....

Daily discharge, in second-feet, of Kern River near Bakersfield, Cal., for 1896–1911—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
26	562	446	592	708	1,062	1,730	4,494	3,173	2,639	.....	.....	.....
27	568	478	948	716	1,018	1,633	4,499	3,254	2,876	.....	.....	.....
28	557	479	914	720	968	1,554	4,427	3,044	3,060	.....	.....	.....
29	553	487	802	874	.....	1,522	4,235	3,123	3,123	.....	.....	.....
30	564	502	732	1,045	.....	1,550	3,958	3,351	3,324	.....	.....	.....
31	565	.....	697	966	.....	1,661	.....	3,590	.....	.....	.....	.....
1907-8.												
1	.....	.....	.....	.....	.....	851	964	2,015	1,200	825	593	284
2	.....	.....	.....	.....	.....	777	921	2,080	1,119	826	632	272
3	.....	.....	.....	.....	.....	762	903	2,003	1,069	830	656	309
4	.....	.....	.....	.....	.....	745	886	1,765	1,003	838	761	303
5	.....	.....	.....	.....	.....	732	898	1,576	912	829	832	296
6	.....	.....	.....	.....	.....	761	922	1,442	918	852	1,077	285
7	.....	.....	.....	.....	.....	761	958	1,427	941	852	908	286
8	.....	.....	.....	.....	.....	719	1,002	1,477	953	836	827	308
9	.....	.....	.....	.....	.....	716	998	1,348	1,022	806	723	343
10	.....	.....	.....	.....	.....	754	1,004	1,244	1,116	786	672	411
11	.....	.....	.....	.....	.....	706	1,054	1,198	1,162	763	666	371
12	.....	.....	.....	.....	.....	719	1,278	1,163	1,211	763	632	422
13	.....	.....	.....	.....	.....	752	1,418	1,160	1,239	852	576	524
14	.....	.....	.....	.....	.....	801	1,592	1,154	1,245	862	551	458
15	.....	.....	.....	.....	.....	865	1,606	1,120	1,233	796	503	406
16	.....	.....	.....	.....	.....	1,068	1,565	1,112	1,191	739	477	410
17	.....	.....	.....	.....	.....	1,242	1,454	1,058	1,132	657	454	387
18	.....	.....	.....	.....	.....	1,367	1,421	1,032	1,079	582	433	371
19	.....	.....	.....	.....	.....	1,386	1,450	1,002	1,003	494	396	344
20	.....	.....	.....	.....	.....	1,362	1,550	1,011	934	555	379	320
21	.....	.....	.....	.....	.....	1,356	1,625	1,002	895	593	367	306
22	.....	.....	.....	.....	.....	1,407	1,635	974	910	545	371	294
23	.....	.....	.....	.....	.....	1,442	1,611	1,012	878	530	359	285
24	.....	.....	.....	.....	.....	1,454	1,467	1,099	847	494	357	330
25	.....	.....	.....	.....	.....	1,493	1,396	1,100	859	475	340	330
26	.....	.....	.....	.....	.....	1,576	1,418	1,286	876	468	319	453
27	.....	.....	.....	.....	.....	1,475	1,485	1,294	901	464	307	511
28	.....	.....	.....	.....	.....	1,321	1,639	1,198	886	474	298	501
29	.....	.....	.....	.....	.....	1,219	1,850	1,161	853	506	302	449
30	.....	.....	.....	.....	.....	1,158	2,023	1,237	817	602	283	402
31	.....	.....	.....	.....	.....	1,064	.....	1,291	.....	604	272	.....
1908-9.												
1	378	340	310	297	1,325	1,838	1,936	6,537	6,415	5,049	1,461	1,256
2	359	325	313	304	1,240	2,036	2,247	7,012	7,262	5,240	1,458	1,126
3	362	318	316	314	1,215	2,220	2,686	7,226	8,121	5,680	1,415	993
4	354	317	327	362	1,237	2,725	3,136	7,271	8,712	5,640	1,397	906
5	353	314	335	346	1,198	2,595	3,138	7,346	8,851	5,048	1,381	841
6	350	306	338	318	1,511	2,475	2,909	7,428	8,608	4,294	1,351	890
7	341	299	348	322	2,373	2,398	2,848	7,436	8,123	3,674	1,343	946
8	327	296	336	454	4,425	2,185	2,923	7,331	7,575	3,394	1,311	894
9	306	291	307	427	2,558	2,080	3,068	7,182	7,299	3,315	1,228	847
10	299	291	295	520	2,075	2,032	3,331	7,335	7,105	3,260	1,140	844
11	284	299	287	561	2,345	1,932	3,332	7,126	6,972	3,211	1,060	836
12	279	302	279	483	2,476	1,831	3,188	6,610	6,947	3,330	1,021	775
13	297	311	249	892	3,468	1,781	3,310	6,172	6,935	3,528	1,013	731
14	304	324	334	8,779	2,910	1,835	3,729	5,603	6,801	3,611	999	710
15	313	338	294	5,680	2,538	1,975	4,232	5,544	6,701	3,465	940	694
16	317	343	299	2,804	2,470	2,189	4,786	5,696	6,615	3,110	898	687
17	334	325	301	2,010	2,563	2,222	5,225	5,692	6,431	2,849	883	644
18	396	297	290	1,644	2,861	2,262	5,627	5,689	6,044	2,779	919	630
19	427	279	272	1,375	2,675	2,281	5,921	5,611	5,573	2,666	978	618
20	413	270	264	1,196	2,428	2,137	5,503	5,665	5,039	2,366	1,090	611
21	391	265	269	2,726	2,667	2,163	5,137	5,818	4,889	2,306	1,080	600
22	374	287	291	7,502	2,382	2,187	4,818	5,903	5,236	2,297	1,024	601
23	361	291	298	5,174	2,112	2,027	4,534	5,554	5,614	2,343	963	566
24	360	313	285	3,567	1,972	1,948	4,484	5,203	6,050	2,375	927	560
25	373	328	278	2,215	1,970	1,865	4,615	5,049	6,467	2,340	853	552
26	376	314	283	1,807	1,989	1,849	4,867	5,180	6,238	2,316	794	520
27	366	293	290	1,691	1,987	1,906	5,310	5,619	5,786	2,157	796	514
28	369	296	286	1,661	2,075	1,941	5,794	6,040	5,685	1,837	773	499
29	363	306	288	1,478	.....	1,944	5,962	5,843	5,398	1,656	799	489
30	358	304	290	1,423	.....	2,090	6,137	5,523	5,190	1,568	899	524
31	349	.....	292	1,384	.....	1,912	.....	5,659	.....	1,542	1,192	.....

Daily discharge, in second-feet, of Kern River near Bakersfield, Cal., for 1896–1911—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
1	518	455	625	3,323	882	955	1,137	1,954	2,453	805	577	298
2	545	455	636	3,270	880	1,038	1,180	1,910	2,397	745	561	291
3	540	443	813	2,036	831	1,136	1,229	1,889	2,210	691	544	294
4	601	441	743	1,571	827	1,211	1,333	1,888	1,980	694	516	293
5	616	446	594	1,318	881	1,306	1,397	1,812	1,833	713	486	289
6	608	443	692	1,195	889	1,397	1,446	1,722	1,754	621	465	276
7	593	450	647	1,143	854	1,415	1,413	1,708	1,616	557	444	262
8	584	460	1,539	1,136	881	1,459	1,371	1,845	1,479	546	417	252
9	581	486	4,167	1,166	883	1,520	1,420	2,016	1,377	576	397	255
10	561	599	4,656	1,125	886	1,534	1,545	2,201	1,346	611	394	251
11	539	714	2,176	1,083	879	1,513	1,663	2,219	1,389	627	377	248
12	519	605	1,593	1,045	854	1,505	1,663	2,154	1,489	642	390	248
13	499	583	1,344	993	872	1,536	1,547	2,139	1,400	628	416	248
14	490	583	1,213	993	853	1,562	1,490	2,261	1,311	634	392	260
15	490	604	1,092	1,002	914	1,599	1,519	2,236	1,268	631	393	282
16	483	561	995	972	938	1,439	1,612	2,338	1,212	606	383	320
17	482	546	946	984	913	1,445	1,796	2,336	1,124	582	364	339
18	473	583	912	907	875	1,526	1,782	2,147	1,083	549	350	375
19	483	572	845	871	841	1,614	1,942	2,071	1,065	908	341	353
20	477	564	857	896	866	1,679	2,043	2,059	1,029	1,095	334	334
21	491	569	928	881	925	1,694	2,078	2,008	1,003	987	332	312
22	490	653	893	888	863	1,540	2,031	1,955	988	883	330	302
23	464	785	873	966	909	1,450	2,078	2,040	957	795	333	302
24	441	721	867	943	901	1,361	2,145	2,079	941	734	347	298
25	449	666	821	964	888	1,285	2,188	2,111	921	679	351	288
26	451	699	764	907	882	1,229	2,162	2,034	905	624	342	289
27	455	732	868	887	881	1,195	2,255	2,004	908	594	333	287
28	450	658	818	898	910	1,226	2,257	2,194	897	593	338	282
29	469	413	831	907	.....	1,205	2,121	2,284	881	654	331	270
30	444	630	823	914	.....	1,178	2,026	2,366	848	612	323	276
31	452	.....	874	888	.....	1,142	.....	2,422	.....	584	307	.....
1910–11.												
1	278	332	301	318	3,437	593	2,240	2,481	2,607	3,210	1,200	492
2	270	331	285	294	1,906	599	2,398	2,543	2,588	3,004	1,192	487
3	267	334	309	281	1,489	601	2,397	2,603	2,603	3,122	1,151	474
4	268	339	321	288	1,381	657	2,420	2,830	2,842	3,270	1,076	477
5	256	341	359	286	1,415	718	2,474	3,095	3,179	3,203	1,021	482
6	243	337	353	286	1,205	724	2,883	3,253	3,466	3,232	988	471
7	249	332	321	289	1,083	719	2,539	3,164	3,815	3,126	959	445
8	250	334	327	289	1,003	737	2,350	3,224	3,518	3,202	922	444
9	252	334	325	294	952	1,353	2,235	3,237	3,419	3,177	900	445
10	253	332	320	321	905	2,263	2,194	3,086	3,519	3,010	873	440
11	268	338	319	477	874	2,099	2,072	2,937	3,924	2,912	851	437
12	261	336	336	504	813	1,599	1,938	2,907	4,287	2,620	832	428
13	297	330	354	398	765	1,406	1,841	2,921	4,555	2,572	787	410
14	315	326	334	391	818	1,258	1,769	2,972	4,551	2,667	726	392
15	328	322	319	376	806	1,162	1,703	2,906	4,355	2,780	682	393
16	329	313	312	403	729	1,126	1,685	2,678	4,230	2,884	654	383
17	354	305	320	415	688	1,144	1,743	2,598	4,496	2,876	634	378
18	370	302	320	391	683	1,236	1,819	2,597	4,623	2,963	619	386
19	370	297	312	385	699	1,266	1,985	2,690	4,562	2,951	603	390
20	378	294	335	375	702	1,298	2,263	2,878	4,396	2,874	593	383
21	378	293	334	393	673	1,346	2,328	3,136	4,198	2,536	599	370
22	361	295	337	579	629	1,403	2,366	3,368	4,098	2,245	601	371
23	344	307	339	625	618	1,451	2,494	3,623	3,742	2,092	581	391
24	341	309	340	545	598	1,543	2,693	3,814	3,505	2,021	543	424
25	346	302	340	657	589	1,585	2,792	3,672	3,219	1,887	526	421
26	341	307	341	905	569	1,607	2,943	3,377	3,179	1,688	525	398
27	331	302	326	728	574	1,653	3,044	3,075	3,487	1,530	518	415
28	329	290	309	630	593	1,670	2,860	2,938	3,752	1,431	508	426
29	323	298	309	703	.....	1,724	2,651	2,911	3,726	1,347	495	424
30	312	308	305	2,786	.....	1,851	2,515	2,783	3,525	1,262	484	441
31	307	.....	321	3,667	.....	2,029	.....	2,712	.....	1,208	488	.....

Daily discharge, in second-feet, of Kern River near Bakersfield, Cal., for 1896–1911—Con.

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	600	366	336	11	414	382	350	21	368	365	366
2	573	354	341	12	393	398	345	22	372	362	360
3	530	376	335	13	393	393	335	23	378	351	334
4	495	365	334	14	396	392	330	24	398	333	362
5	456	369	361	15	398	401	340	25	399	321	372
6	437	381	351	16	389	393	346	26	384	326	327
7	429	381	363	17	389	386	366	27	374	348	301
8	418	388	364	18	381	380	381	28	371	327	341
9	412	369	365	19	365	368	367	29	368	296	385
10	410	364	363	20	368	367	360	30	374	336	389
								31	384	.....	346

NOTE.—Daily discharge furnished by the Kern County Land Co. No record for the period July, 1907, to February, 1908.

Monthly discharge of Kern River near Bakersfield, Cal., for 1893–1911.

[Drainage area, 2,345 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1893–94.						
October	554	517	534	0.23	0.26	32,861
November	559	467	518	.22	.24	30,827
December	590	430	516	.22	.25	31,757
January	741	562	661	.28	.32	40,644
February	1,114	604	717	.30	.32	39,817
March	1,443	762	1,001	.43	.50	61,541
April	1,892	1,209	1,495	.64	.71	88,952
May	2,208	1,228	1,607	.69	.79	98,798
June	1,719	871	1,085	.46	.51	64,557
July	1,051	400	700	.30	.34	43,036
August	549	256	335	.14	.16	20,565
September	382	172	248	.11	.12	14,756
The year	2,208	172	785	.330	4.52	568,000
1894–95.						
October	363	224	279	.12	.14	17,178
November	268	230	244	.10	.11	14,500
December	805	234	470	.20	.23	28,908
January	1,616	473	809	.34	.40	49,762
February	4,762	675	1,252	.53	.55	69,536
March	3,004	987	1,374	.59	.67	84,437
April	3,897	1,911	2,724	1.16	1.29	162,076
May	5,384	3,100	4,369	1.86	2.14	268,608
June	3,721	2,174	2,906	1.24	1.37	172,265
July	2,063	867	1,482	.63	.73	91,113
August	1,073	354	629	.27	.31	38,665
September	676	290	344	.15	.17	20,469
The year	5,384	230	1,407	.600	8.11	1,020,000
1895–96.						
October	612	276	327	0.14	0.16	20,106
November	436	308	346	.15	.17	20,588
December	447	368	403	.17	.20	24,779
January	3,101	377	747	.32	.37	45,931
February	798	559	617	.26	.28	35,489
March	2,089	652	951	.41	.47	58,475
April	1,263	766	972	.41	.46	57,838
May	3,370	934	1,401	.60	.69	86,144
June	3,611	1,244	2,456	1.05	1.17	146,142
July	2,210	741	1,346	.57	.66	82,762
August	741	353	486	.21	.24	29,883
September	473	234	304	.13	.14	18,089
The year	3,611	234	863	.368	5.01	626,000

Monthly discharge of Kern River near Bakersfield, Cal., for 1893–1911—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1896–97.						
October	425	223	267	0.11	0.13	16,417
November	416	288	355	.15	.17	21,124
December	426	313	347	.15	.17	21,336
January	832	305	373	.16	.18	22,935
February	2,306	516	809	.35	.36	44,930
March	2,044	688	923	.39	.45	56,753
April	4,410	1,094	2,914	1.24	1.38	173,395
May	5,342	4,054	4,580	1.95	2.25	281,613
June	4,352	1,289	2,309	.98	1.09	137,395
July	1,536	644	1,006	.43	.49	61,857
August	671	338	469	.20	.23	28,838
September	363	260	295	.13	.14	17,554
The year	5,342	223	1,220	.520	7.04	884,000
1897–98.						
October	441	278	340	0.15	0.17	20,906
November	477	289	355	0.15	.17	21,124
December	1,023	327	422	0.18	.21	25,948
January	400	311	363	.15	.17	22,320
February	923	316	434	.19	.20	24,103
March	485	304	388	.17	.20	23,857
April	1,342	371	710	.30	.33	42,247
May	980	560	735	.31	.36	45,193
June	686	394	551	.23	.26	32,786
July	416	127	244	.10	.12	15,003
August	142	86	120	.05	.06	7,378
September	294	80	116	.05	.06	6,902
The year	1,342	80	398	.169	2.31	288,000
1898–99.						
October	232	127	160	.07	.08	9,838
November	188	136	166	.07	.08	9,877
December	314	147	199	.08	.09	12,236
January	361	182	263	.11	.13	16,171
February	365	258	302	.13	.14	16,772
March	4,932	247	590	.25	.29	36,278
April	1,167	593	893	.38	.43	53,138
May	1,302	576	835	.36	.41	51,342
June	2,230	809	1,331	.57	.63	79,200
July	894	229	489	.21	.24	30,067
August	240	99	156	.07	.08	9,592
September	117	89	105	.04	.05	6,248
The year	4,932	89	457	.195	2.64	331,000
1899–1900.						
October	228	86	160	0.07	0.08	9,838
November	384	183	221	.09	0.10	13,588
December	780	182	278	.12	.14	17,032
January	753	274	362	.15	.17	22,258
February	313	250	280	.12	.12	15,550
March	484	325	413	.18	.21	25,394
April	567	395	472	.20	.22	28,086
May	1,852	456	1,111	.47	.54	68,313
June	1,774	865	1,283	.55	.61	76,344
July	796	213	392	.17	.20	24,103
August	209	103	144	.06	.07	8,854
September	259	108	166	.07	.08	9,878
The year	1,852	86	440	.188	2.54	319,000
1900–1901.						
October	180	142	159	.07	.08	9,776
November	1,005	165	349	.15	.17	20,767
December	430	299	373	.16	.18	22,935
January	2,049	226	493	.21	.24	30,313
February	1,963	342	860	.37	.39	47,762
March	1,658	901	1,270	.54	.62	78,089
April	2,632	637	1,398	.60	.67	83,187
May	4,295	2,091	3,032	1.29	1.49	186,430
June	4,212	2,455	3,324	1.42	1.58	197,792
July	3,856	1,120	1,864	.80	.92	114,613
August	1,804	505	968	.41	.47	59,520
September	526	249	345	.15	.17	20,529
The year	4,295	142	1,203	.514	6.98	872,000

Monthly discharge of Kern River near Bakersfield, Cal., for 1893–1911—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1901–2.						
October	756	259	317	0.14	0.16	19,492
November	421	343	377	.16	.18	22,433
December	457	268	323	.14	.16	19,860
January	321	242	283	.12	.14	17,401
February	1,828	243	371	.16	.17	20,604
March	2,629	601	790	.34	.39	48,575
April	3,758	799	1,805	.77	.86	107,405
May	2,405	1,375	1,787	.76	.88	109,878
June	3,096	1,235	2,165	.92	1.03	128,826
July	1,354	453	706	.30	.35	43,410
August	453	205	312	.13	.15	19,184
September	232	174	197	.08	.09	11,722
The year	3,758	174	786	.335	4.56	569,000
1902–3.						
October	292	161	199	.09	.10	12,236
November	413	225	281	.12	.13	16,721
December	346	231	269	.11	.13	16,540
January	2,617	229	350	.15	.17	21,521
February	665	337	454	.19	.20	25,214
March	1,376	413	579	.25	.29	35,601
April	1,978	872	1,249	.53	.59	74,321
May	3,374	1,380	2,148	.92	1.06	132,075
June	2,927	1,786	2,340	1.00	1.12	139,240
July	1,891	445	868	.37	.43	53,371
August	484	198	303	.13	.15	18,631
September	220	165	191	.08	.09	11,365
The year	3,374	161	769	.328	4.46	557,000
1903–4.						
October	232	150	174	.07	.08	10,699
November	228	166	203	.09	.10	12,079
December	218	176	201	.09	.10	12,359
January	241	156	195	.08	.09	11,990
February	1,403	199	346	.15	.16	19,902
March	2,456	351	667	.28	.32	41,012
April	1,295	796	1,005	.43	.48	59,802
May	2,932	810	1,841	.79	.91	113,199
June	3,167	868	1,746	.74	.83	103,894
July	992	441	646	.28	.32	39,721
August	652	310	467	.20	.23	28,715
September	524	187	267	.11	.12	15,888
The year	3,167	150	638	.272	3.74	469,000
1904–5.						
October	666	303	438	.19	.22	26,932
November	342	249	286	.12	.13	17,018
December	350	208	241	.10	.12	14,819
January	343	246	281	.120	.14	17,280
February	517	305	396	.169	.18	21,990
March	1,309	435	823	.351	.40	50,600
April	1,451	799	1,043	.445	.50	62,060
May	2,625	1,298	1,915	.817	.94	117,800
June	3,039	1,563	2,235	.953	1.06	133,000
July	1,520	451	876	.374	.43	53,860
August	427	250	327	.139	.16	20,110
September	233	194	211	.090	.10	12,560
The year	3,039	194	756	.322	4.38	548,000
1905–6.						
October	230	175	207	.088	.10	12,730
November	263	215	236	.101	.11	14,040
December	285	221	261	.111	.13	16,050
January	2,554	230	693	.296	.34	42,600
February	785	506	626	.267	.28	34,800
March	5,527	755	2,063	.880	1.01	127,000
April	4,255	1,970	2,910	1.24	1.38	173,000
May	7,832	2,798	5,859	2.50	2.88	360,000
June	9,505	5,306	7,704	3.29	3.67	458,000
July	8,431	3,925	6,503	2.77	3.19	400,000
August	3,552	1,405	2,299	.980	1.13	141,000
September	1,522	704	973	.415	.46	57,900
The year	9,505	175	2,528	1.08	14.68	1,840,000

Monthly discharge of Kern River near Bakersfield, Cal., for 1893–1911—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1906–7.						
October	705	553	609	0.260	0.30	37,400
November	580	433	503	.215	.24	29,900
December	948	506	618	.264	.30	38,000
January	1,045	548	678	.289	.33	41,700
February	1,345	875	1,023	.436	.45	56,800
March	2,066	889	1,354	.577	.67	83,300
April	4,504	1,744	3,323	1.42	1.58	198,000
May	3,715	2,818	3,252	1.39	1.60	200,000
June	4,271	2,088	3,092	1.32	1.47	184,000
The period						869,000
1908.						
March	1,576	706	1,058	.451	.52	65,100
April	2,023	886	1,333	.568	.63	79,300
May	2,080	1,002	1,292	.551	.64	79,400
June	1,245	817	1,013	.432	.48	60,300
July	862	464	681	.290	.33	41,900
August	1,077	272	527	.225	.26	32,400
September	524	272	366	.156	.17	21,800
The period						380,000
1908–9.						
October	427	279	349	.149	.17	21,500
November	343	265	306	.130	.14	18,200
December	348	249	298	.127	.15	18,300
January	8,779	297	1,930	.823	.95	119,000
February	4,425	1,198	2,250	.959	1.00	125,000
March	2,725	1,781	2,090	.891	1.03	129,000
April	6,137	1,936	4,160	1.77	1.98	248,000
May	7,436	5,049	6,220	2.65	3.06	382,000
June	8,851	4,889	6,620	2.82	3.15	394,000
July	5,680	1,542	3,170	1.35	1.56	195,000
August	1,461	773	1,080	.461	.53	66,400
September	1,256	489	730	.311	.35	43,400
The year	8,851	249	2,400	1.02	14.07	1,630,000
1909–10.						
October	616	441	508	.217	.25	31,200
November	785	413	571	.244	.27	34,000
December	4,656	625	1,180	.503	.58	72,600
January	3,323	871	1,200	.512	.59	73,800
February	938	827	881	.376	.39	48,900
March	1,694	955	1,380	.588	.68	84,800
April	2,257	1,137	1,730	.738	.82	103,000
May	2,422	1,708	2,080	.887	1.02	128,000
June	2,453	848	1,340	.571	.64	79,700
July	1,095	546	684	.292	.34	42,100
August	577	307	394	.168	.19	24,200
September	375	248	289	.123	.14	17,200
The year	4,656	248	1,020	.435	5.91	740,000
1910–11.						
October	378	243	309	.132	.15	19,000
November	341	290	317	.135	.15	18,900
December	359	285	325	.139	.16	20,000
January	3,667	281	622	.265	.31	38,200
February	3,437	569	971	.414	.43	53,900
March	2,263	593	1,300	.554	.64	79,900
April	3,044	1,685	2,320	.989	1.10	138,000
May	3,814	2,481	3,000	1.28	1.48	184,000
June	4,623	2,588	3,730	1.59	1.77	222,000
July	3,270	1,208	2,550	1.09	1.26	157,000
August	1,200	484	746	.318	.37	45,900
September	492	370	424	.181	.20	25,200
The year	4,623	243	1,384	.590	8.02	1,000,000
1911.						
October	600	365	413	.176	.20	25,400
November	401	296	635	.156	.17	21,700
December	389	301	352	.150	.17	21,600

SOUTH FORK OF KERN RIVER NEAR ONYX, CAL.

This station, which is located three-fourths of a mile north of the Kernville-Walker Pass road on the Rankin ranch, in the NE. ¼ SW. ¼ sec. 24, T. 25 S., R. 35 E., about 5 miles northeast of Onyx, was established September 12, 1911.

Three small irrigation ditches head above the station.

The gage is an inclined staff on the left bank, installed November 16, 1911, 200 feet below the intake of the lower Rankin ditch. From September 12 to November 15, 1911, a temporary vertical gage, at the same location and datum, was used.

The channel is composed of sand and fine gravel and is fairly permanent.

Discharge measurements are made from a car and cable 60 feet below the gage.

Discharge measurements of South Fork of Kern River near Onyx, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-ft.*
Sept. 12	H. J. Tompkins	1.85	34
Nov. 16	do	1.85	63
1912.			
Apr. 28	J. E. Stewart	3.02	231
May 19	H. J. Tompkins	3.39	340

NOTE.—Powers ditch diverts water from South Fork of Kern River above this station. On Sept. 12, 1911, it was diverting 2.7 second-feet and on Nov. 16, 1911, 1.1 second-feet.

Daily gage height, in feet, of South Fork of Kern River near Onyx, Cal., for 1911–12.

Day.	Sept.	Day.	Sept.	Day.	Sept.	Day.	Sept.	Day.	Sept.	Day.	Sept.
1911.		1911.		1911.		1911.		1911.		1911.	
1		6		11		16	1.85	21	1.69	26	1.72
2		7		12	1.85	17	1.73	22	1.74	27	1.70
3		8		13	1.85	18	1.73	23	1.75	28	1.60
4		9		14	1.81	19	1.72	24	1.73	29	2.10
5		10		15	1.79	20	1.72	25	1.72	30	2.90
										31	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	2.00	1.75	1.80	1.71	1.80	1.80	1.90	2.75	2.50
2	1.92	1.75	1.80	1.71	1.80	1.90	1.90	2.75	2.50
3	1.87	1.73	1.88	1.71	1.80	1.90	1.90	2.75	2.45
4	1.84	1.72	1.88	1.72	1.81	1.90	2.00	2.75	2.45
5	1.83	1.71	1.88	1.72	1.81	1.90	2.00	2.75	2.40
6	1.83	1.71	1.88	1.75	1.80	1.90	2.00	2.75	2.40
7	1.82	1.71	1.88	1.75	1.81	1.90	2.00	2.72	2.30
8	1.71	1.71	1.80	1.80	1.81	1.80	2.40	2.72	2.30
9	1.71	1.71	1.80	1.87	1.75	1.80	2.70	2.72	2.10
10	1.71	1.71	1.80	1.90	1.73	1.90	2.60	2.72	2.10
11	1.70	1.71	1.85	1.73	1.70	2.00	2.60	2.70	2.10
12	1.70	1.60	1.87	1.74	1.70	2.00	2.50	2.70	2.00
13	1.70	1.60	1.87	1.79	1.70	1.90	2.20	2.90	2.00
14	1.70	1.60	1.87	1.80	1.70	1.80	2.20	2.90	1.95
15	1.72	1.70	1.85	1.80	1.70	1.80	2.20	3.20	1.90

Daily gage height, in feet, of South Fork of Kern River near Onyx, Cal., for 1911–12— Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
16	1.71	1.81	1.85	1.81	1.70	1.95	2.20	3.20	1.80
17	1.70	1.78	1.85	1.80	1.75	1.95	2.10	3.30	1.80
18	1.70	1.79	1.85	1.80	1.75	1.95	2.20	3.30	1.80
19	1.70	1.80	1.85	1.80	1.75	1.95	2.20	3.35	1.80
20	1.70	1.80	1.85	1.80	1.75	1.90	2.20	3.30	1.80
21	1.70	1.80	1.85	1.80	1.76	1.90	2.20	3.30	1.85
22	1.70	1.80	1.85	1.80	1.77	1.90	2.20	2.80	1.85
23	1.70	1.80	1.85	1.80	1.80	1.90	2.30	2.80	1.85
24	1.70	1.80	1.88	1.80	1.90	1.90	2.50	2.70	1.85
25	1.70	1.80	1.90	1.80	1.81	1.90	2.50	2.70	1.80
26	1.70	1.85	1.90	1.80	1.75	1.90	2.70	2.70	1.80
27	1.70	1.90	1.90	1.80	1.78	1.90	2.70	2.60	1.80
28	1.78	1.90	1.90	1.80	1.78	1.90	2.70	2.60	1.80
29	1.80	1.87	1.90	1.80	1.76	1.90	2.70	2.60	1.80
30	1.80	1.78	1.85	1.80	.....	1.90	2.70	2.50	1.80
31	1.80	.....	1.85	1.80	.....	1.90	.....	2.50	.....

SOUTH FORK OF KERN RIVER NEAR ISABELLA, CAL.

This station, which is located at the highway bridge near Isabella, in the NW. ¼ sec. 20, T. 26 S., R. 33 E., was established October 5, 1910.

Fay Creek and Kelso Creek enter about 10 miles above the station and the South Fork joins the main river about half a mile below Isabella. The station is below all diversions and the low-water flow is entirely used for irrigation. Twenty-eight ditches, ranging in capacity from 8 to 40 second-feet, divert water from this stream for irrigation in South Fork valley. The upper ditches head about 20 miles above the mouth of the river.

The gage is a vertical staff fastened to the piling of the middle bent of the bridge.

Both banks are high and wooded and not subject to overflow.

The channel, which is composed of sand, is somewhat shifting and the current is moderately swift.

Discharge measurements are made from the bridge.

This station is maintained in cooperation with the United States Forest Service.

No estimate of daily or monthly discharge has been prepared.

Discharge measurements of South Fork of Kern River near Isabella, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-feet.*
Oct. 5	J. E. Stewart	0.40	9.7
Nov. 21	H. J. Tompkins	.50	25
1911.			
Feb. 6	H. J. Tompkins	1.30	262
Mar. 3	.....do	.80	121
Apr. 28	.....do	2.40	702
May 2	.....do	2.15	647
June 24	.....do	1.70	192
Sept. 14	.....do	.35	13
Nov. 17	.....do	.45	21
1912.			
Apr. 29	J. E. Stewart	.92	136
May 17	H. J. Tompkins	1.44	281

Daily gage height, in feet, of South Fork of Kern River near Isabella, Cal., for 1910–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	.....	0.6	.....	.....	1.6	0.9	.....	2.1	1.7	1.3	0.8	.....
2	.....	.6	.....	.....	.....	.....	1.9	2.15	.....	1.3	.9	.....
3	.....	.6	.....	.....	.....	.8	1.9	2.15	.....	1.3	.9	.....
4	.....	.....	.....	.....	1.5	.....	.....	2.2	.....	1.2	.9	.....
5	0.4	.....	.....	.....	1.5	.....	2.0	2.4	1.7	1.2	.....	.....
6	.4	.....	.....	.....	1.3	.....	2.1	.....	1.7	.....	.....	.....
7	.....	.....	.....	.....	1.0	.....	.....	.....	1.8	.....	.....	.....
8	.4	.5	.....	.....	1.0	1.0	.....	.....	1.95	.....	.....	.....
9	.....	.5	0.5	3.0	.9	2.05	.....	.....	.....	.....	.....	.....
10	.4	.....	.....	.....	.9	2.25	1.9	2.3	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	1.8	1.9	2.2	.....	.....	.....	.....
12	.....	.5	.5	.....	.....	.9	.....	2.3	.....	.....	.....	.....
13	.5	.5	.....	.....	.9	.....	.....	2.3	.....	1.0	.....	.....
14	.5	.5	.5	.....	.9	.....	.....	2.2	.....	1.0	.4	0.4
15	.....	.5	.....	.....	.....	.....	.....	2.0	.....	1.0	.4	.4
16	.....	.....	.5	.....	.9	.6	.....	.....	.....	1.0	.4	.4
17	.....	.5	.5	.....	.9	.....	.....	.....	.....	1.0	.....	.....
18	.....	.....	.....	4.0	.....	.....	.....	.....	.....	1.0	.....	.....
19	.6	.5	.5	3.0	.....	.....	.....	.....	.....	1.0	.....	.....
20	.6	.....	.5	.....	.8	.5	.....	2.0	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	1.4	2.1	2.1	.....	.....	.....	.....
22	.6	.....	.....	6.0	.9	2.4	.....	2.1	.....	.....	.....	.....
21	.6	.5	.....	.....	.9	2.5	.....	2.05	1.7	.....	.....	.....
24	.....	.....	.....	.....	.....	2.5	2.3	2.05	1.7	.....	.....	.4
25	.....	.4	.....	.....	.....	.....	.....	2.0	.....	.....	.....	.4
26	.....	.5	.....	.....	.9	1.6	2.4	2.0	.....	.....	.....	.4
27	.....	.....	.....	.....	.9	1.5	.....	1.9	1.6	.....	.....	.4
28	.6	.....	.....	.9	.9	1.5	2.4	.....	1.5	.....	.....	.4
29	.....	.....	.....	1.0	.....	1.5	2.3	.....	.....	.....	.....	.9
30	.....	.....	.....	1.8	.....	.....	2.2	.....	.....	.8	.....	.9
31	.6	.....	.....	2.9	.....	1.7	.....	1.7	.....	.9	.....	.....
1911–12.												
1	.7	.....	.5	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.7	.5	.5	.....	.7	.6	.7	.....	.....	.....	.....	.....
3	.7	.5	.6	.7	.....	.....	.....	.9	.....	.....	.....	.....
4	.....	.4	.6	.....	.....	.6	.....	.....	.7	.....	.....	.....
5	.6	.5	.6	.7	.6	.....	.....	.....	.....	.....	.....	.....
6	.6	.4	.6	.....	.....	.....	.7	.....	.....	.....	.....	.....
7	.6	.4	.6	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	.....	.....	.6	.8	.....	.7	.....	.....	.....	.....	.....	.....
9	.6	.4	.6	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.6	.4	.6	.....	.....	.8	.....	.....	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	.5	.....	.....	.8	.....	.9	.....	.9	.....	.....	.....	.....
13	.5	.5	.....	.8	.6	.....	.....	.....	.....	.....	.....	.....
14	.5	.4	.....	.....	.....	.8	.8	.....	.....	.....	.....	.....
15	.5	.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	.5	.4	.....	.7	.6	.....	.....	.....	.5	.....	.....	.....
17	.5	.5	.....	.....	.....	.7	.....	1.45	.....	.....	.....	.....
18	.5	.5	.6	.7	.6	.....	.....	.....	.....	.....	.....	.....
19	.5	.5	.....	.....	.....	.....	.9	.....	.....	.....	.....	.....
20	.5	.5	.....	.....	.....	.7	.....	.....	.....	.....	.....	.....
21	.5	.5	.....	.....	.....	.....	.....	.....	.4	.....	.....	.....
22	.5	.5	.....	.8	.6	.7	.....	.9	.....	.....	.....	.....
23	.5	.....	.6	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	.5	.5	.....	.8	.....	.....	.9	.....	.....	.....	.....	.....
25	.6	.5	.6	.....	.6	.7	.....	.....	.....	.....	.....	.....
26	.6	.5	.6	.8	.....	.....	.....	.....	.....	.....	.....	.....
27	.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	.6	.5	.6	.....	.6	.....	.....	.....	.....	.....	.....	.....
29	.....	.5	.6	.8	.6	.....	.9	.....	.....	.....	.....	.....
30	.....	.5	.6	.....	.....	.7	1.0	.....	.3	.....	.....	.....
31	.6	.....	.6	.8	.....	.....	.....	.9	.....	.....	.....	.....

ERSKINE CREEK NEAR ISABELLA, CAL.

This station, which is located at the ford at the mouth of the canyon, 2¾ miles above junction with Kern River, in the NE. ¼ sec. 9, T. 27 S., R. 33 E., 5 miles south of Isabella, was established February 7, 1911.

A small ditch diverts water for irrigation about 9 miles above the station.

The gage is a vertical staff fastened to a willow tree on the left bank, about 80 feet above ford.

The bed of the stream is composed of sand and gravel. At high stages the creek flows in two channels.

Discharge measurements are made by wading near the gage.

Records of gage heights and discharge measurements are furnished by the United States Forest Service.

Discharge measurements of Erskine Creek near Isabella, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-ft.*
Feb. 7	H. J. Tompkins	2.50	8.7
Apr. 29	do	2.60	4.1
June 26	do	2.30	1.3
Sept. 14	do	2.10	.3
1912.			
Apr. 30	J. E. Stewart	2.74	5.1
May 31	H. J. Tompkins	2.61	3.8

Daily gage height, in feet, of Erskine Creek near Isabella, Cal., for 1911–12.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.									
1									
2									
3				2.9					
4									
5									
6									
7		2.5							
8			2.9		2.5				
9									
10									
11									
12									
13									
14		2.4							2.1
15									
16									
17			2.8						
18				2.8					
19									
20									
21									
22									
23									
24		2.8							
25									
26			3.0	2.7		2.3			2.1
27									
28									
29				2.6					
30									2.1
31									

Daily gage height, in feet, of Erskine Creek near Isabella, Cal., for 1911–12—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1									
2	2.1		2.6						
3		2.3							
4						2.5			
5					2.3	2.5	2.6		
6				2.4					
7									2.0
8									
9									
10						2.6			
11			2.68					2.8	
12	2.3								
13									
14								2.7	
15				2.5		2.6			
16						2.7			
17								2.6	
18									
19									
20						2.7			
21						2.6	2.8	2.6	
22						2.6			
23		2.3							
24						2.7			
25									
26						2.6			
27				2.5					
28		2.4							
29					2.1				1.3
30						2.7	2.75		
31				2.4					

NOTE.—Creek practically dry during July and August, 1911.

Daily discharge, in second-feet, of Erskine Creek near Isabella, Cal., for 1911–12.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.									
1									
2									
3				6.8					
4									
5									
6									
7		8.7							
8			13		2.8				
9									
10									
11									
12									
13									0.3
14		8							
15									
16									
17			5.7						
18				5.7					
19									
20									
21									
22									
23									
24		12							
25									
26			7.9	4.7		1.3			.3
27									
28									
29				3.7					
30									.3
31									

Daily discharge, in second-feet, of Erskine Creek near Isabella, Cal., for 1911–12—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1									
2	0.3		3.7						
3		1.3							
4						2.8			
5					1.3	2.8	3.7		
6				2.0					
7									0.1
8									
9									
10						3.7			
11			4.5					5.7	
12	1.3								
13									
14								4.7	
15				2.8		3.7			
16						4.7			
17								3.7	
18									
19									
20						4.7			
21						3.7	5.7	3.7	
22						3.7			
23		1.3							
24						4.7			
25									
26						3.7			
27				2.8					
28		2.0							
29					.3				
30						4.7	5.2		
31				2.0					

NOTE.—Daily discharge determined from a fairly well-defined rating curve.

Monthly discharge of Erskine Creek near Isabella, Cal., for 1911–12.

Month.	Mean discharge in second-feet.	Run-off (total in acre-feet).
1911.		
February	9	500
March	10	615
April	6	357
May	3	184
June	.1	60
July	.0	0
August	.0	0
September	.3	18
The period		1,730
1911–12.		
October	1	61
November	1.5	89
December	4	246
January	3	184
February	1	58
March	4	246
April	6	357
May	4	246
June	.5	30
The period		1,520

NOTE.—Monthly discharge estimated from fragmentary record of daily discharge and consideration of discharge of adjacent streams. Values are only approximate.

CALIENTE CREEK AT BASE OF FOOTHILLS, KERN COUNTY, CAL.

The following information regarding records of discharge of Caliente Creek, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

No discharge measurements were made on this creek, all estimates of discharge being derived from the discharge per square mile of other streams. The exposure of its basin is different and other causes combine to make the application of data obtained on similar streams further north not strictly applicable.

Monthly discharge of Caliente Creek at base of foothills, Kern County, Cal., for 1878–1884.[a]

[Drainage area, 423 square miles.]

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.				
November	0	0.0	0.0	0
December	0	.0	.0	0
January	34	.08	.09	2,091
February	59	.14	.15	3,277
March	30	.07	.08	1,845
April	106	.25	.28	6,307
May	76	.18	.21	4,673
June	25	.06	.07	1,488
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	27.8	.066	.88	19,700
1879–80.				
November	110	.26	.29	6,545
December	212	.50	.58	13,035
January	508	1.20	1.38	31,236
February	973	2.30	2.48	55,968
March	1,100	2.60	3.00	67,636
April	1,227	2.90	3.24	73,012
May	846	2.00	2.31	52,019
June	212	.50	.56	12,615
July	21	.05	.06	1,291
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	434	1.03	13.90	313,000
1880–81.				
November	85	.20	.22	5,058
December	212	.50	.58	13,035
January	212	.50	.58	13,035
February	423	1.00	1.04	23,492
March	423	1.00	1.15	26,009
April	423	1.00	1.12	25,170
May	423	1.00	1.15	26,009
June	212	.50	.56	12,615
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	201	.475	6.40	144,000

[a] The entire record estimated from the run-off of neighboring streams.

Monthly discharge of Caliente Creek at base of foothills, Kern County, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1881–82.				
November	0	0.0	0.0	0
December	51	.12	.14	3,136
January	51	.12	.14	3,136
February	63	.15	.16	3,499
March	212	.50	.58	13,035
April	212	.50	.56	12,615
May	42	.10	.12	2,582
June	0	.0	.0	0
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	52.6	.124	1.70	38,000
1882–83.				
November	63	.15	.17	3,749
December	63	.15	.17	3,874
January	63	.15	.17	3,874
February	63	.15	.16	3,499
March	338	.80	.92	20,783
April	212	.50	.56	12,615
May	169	.40	.46	10,391
June	0	.0	.0	0
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	42	.10	.12	2,582
The year	84.4	.20	2.73	61,400
1883–84.				
November	42	.10	.11	2,499
December	63	.15	.17	3,874
January	212	.50	.58	13,035
February	1,269	3.00	3.24	72,994
March	1,269	3.00	3.46	78,028
April	846	2.00	2.23	50,340
May	169	.40	.46	10,391
June	212	.50	.56	12,615
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	340	.804	10.81	244,000

BASIN CREEK NEAR HAVALAH, CAL.

This station, which is located at the highway bridge on the Caliente-Havalah road at the Rankin ranch, in Walker basin, about 10 miles southwest of Havalah, was established February 8, 1911.

The Rankin ditch diverts water above the station.

The drainage area above this point comprises 36.2 square miles.

The gage is a vertical staff on the left bank at the bridge.

The bed of the stream is composed of sand and gravel and will shift at high water.

Discharge measurements are made by wading below the bridge. Results are fair.

Records of gage heights and discharge measurements are furnished by the United States Forest Service.

Discharge measurements of Basin Creek near Havalah, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-ft.*
Feb. 8	H. J. Tompkins	0.90	7.3
May 6	do	.75	4.4
June 22	do	.73	3.9
Sept. 15	do	.75	3.8
1912.			
Apr. 27	J. E. Stewart	.66	4.8
30	do	.59	3.2
May 16	H. J. Tompkins	.50	2.1

Daily gage height, in feet, of Basin Creek near Havalah, Cal., for 1911–12.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.									
1									0.8
2							0.6		
3					0.6	0.6			
4									.8
5							.6	0.65	
6					.75	.6			
7				0.9	.9				.85
8		0.9							
9						.6	.6	.7	
10									
11				.9	.6				.8
12						.6		.75	
13							.6		
14				.9					
15					.6	.6		.7	.8
16				.6			.6		
17		.9							.8
18				.6	.6	.6		.7	
19							.75		
20			0.9						.85
21				.6	.9	.8		.72	
22						.73	.7		
23				.6					.9
24		.9				.85		.7	
25					.9		.75		
26									.9
27				.6		.9			
28					.6		.75	.75	
29									
30			.9	.6		.85			.9
31					.6		.7	.7	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1				0.80	0.80				
2	0.9	0.9		.80					
3				.82					
4				.82					0.40
5				.82				0.60	
6	.9	.9		.82					
7				.86					.50
8				1.02					
9	1.0			1.02					
10		.9		1.00					

Daily gage height, in feet, of Basin Creek near Havalah, Cal., for 1911–12—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
11				0.90					
12				.88		0.95			
13	1.0			.82			0.80		
14		0 .9		.80				0.60	
15				.80			.90	.60	
16	.9			.80				.50	
17									
18									
19	.9	.9					.60		
20									
21									
22									
23	.9	.9							
24									
25								.40	
26	.9								
27		.9					.66	.50	
28									
29	.9								
30		.9					.59		
31									

Daily discharge, in second-feet, of Basin Creek near Havalah, Cal., for 1911–12.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.									
1		7	7	7	2	2	4	3	5
2		7	7	7	2	2	2	3	5
3		7	7	7	2	2	2	2	5
4		7	7	7	3	2	2	2	5
5		7	7	7	3	2	2	2	5
6		7	7	7	4	2	2	2	6
7		7	7	7	7	2	2	2	6
8		7	7	7	6	2	2	3	6
9		7	7	7	4	2	2	3	6
10		7	7	7	3	2	2	3	5
11		7	7	7	2	2	2	4	5
12		7	7	7	2	2	2	4	5
13		7	7	7	2	2	2	4	5
14		7	7	7	2	2	2	3	5
15		7	7	4	2	2	2	3	5
16		7	7	2	2	2	2	3	5
17		7	7	2	2	2	3	3	5
18		7	7	2	2	2	3	3	5
19		7	7	2	4	3	4	3	6
20		7	7	2	5	4	4	3	6
21		7	7	2	7	5	3	3	6
22		7	7	2	7	4	3	3	7
23		7	7	2	7	5	3	3	7
24		7	7	2	7	6	4	3	7
25		7	7	2	7	6	4	3	7
26		7	7	2	5	7	4	4	7
27		7	7	2	4	7	4	4	7
28		7	7	2	2	7	4	4	7
29			7	2	2	6	4	4	7
30			7	2	2	6	3	3	7
31			7		2		3	3	

Daily discharge, in second-feet, of Basin Creek near Havalah, Cal., for 1911–12—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	7	7		5	5				
2	7	7		5					
3	7	7		5					
4	7	7		5					1
5	7	7		5				4	
6	7	7		5					
7	8	7		6					2
8	9	7		11					
9	10	7		11					
10	10	7		10					
11	10	7		7					
12	10	7		7		9			
13	10	7		5			8		
14	9	7		5				4	
15	8	7		5			11	4	
16	7	7		5				2	
17	7	7							
18	7	7							
19	7	7					4		
20	7	7							
21	7	7							
22	7	7							
23	7	7							
24	7	7							
25	7	7						1	
26	7	7							
27	7	7					5	2	
28	7	7							
29	7	7							
30	7	7					3		
31	7								

NOTE.—Daily discharge determined from two fairly well defined rating curves applicable Feb. 8, 1911, to Mar. 12, 1912, and Apr. 13 to June 30, 1912. Discharge interpolated for days on which gage was not read in 1911.

Monthly discharge of Basin Creek near Havalah, Cal., for 1911–12.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1911.				
February	7	7	7.0	389
March	7	7	7.0	430
April	7	2	4.4	262
May	7	2	3.6	221
June	7	2	3.4	202
July	4	2	2.8	172
August	4	2	3.1	191
September	7	5	5.8	345
The period				2,210
1911–12.				
October	10	7	7.7	473
November	7	7	7.0	417
December			8	492
January			6	369
February			5	288
March			8	492
April			7	417
May			3	184
June			1	60
The period				3,190

NOTE.—Discharge December, 1911, to June 30, 1912, are estimated from the discharge of adjacent streams and from a fragmentary daily discharge record.

TEJON HOUSE CREEK AT TEJON RANCH HOUSE, CAL.

On January 1, 1895, a gaging station was established on Tejon House Creek at a small footbridge just north of the ranch house. At this point a section of the creek bed was measured at as frequent intervals as was convenient. It was found that a heavy flood in January had filled up the channel of the creek 2 feet, as is shown by the sections of January 1 and February 1, and that simple rod readings of height of water would not convey any true idea of discharge. It was therefore determined to measure the depth of water in the center of the creek with a hand rod at the 5-foot mark on the bridge. The observer standing at the 5-foot mark on the bridge measured the distance from bridge to bed and from bridge to water.

The channel of the creek was cleared of all brush and débris for a distance of 20 feet above and below the bridge. In this portion of the channel the creek is nearly straight and the flow fairly uniform. Velocities were measured by floats, which were dropped into the water in different parts of the channel and timed through a distance of at least 20 feet. The mean velocity was taken as 70 or 80 per cent of the surface velocity, depending on the depth of water. On November 13, 1895, the velocities were taken with a Haskell meter, and the mean velocity was then found to be 88 per cent of the surface velocity. R. N. Pogson, a voluntary observer, measured the depth of the stream about once a week and also whenever there was a decided change in the volume of discharge. After the bed of the creek is again filled, following the erosion by floods, it remains fairly constant in section.

The results given below can be considered only approximate.

Discharge measurements of Tejon House Creek at Tejon ranch house, Cal., in 1879–1896.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
1879.			
Mar. 3	J. D. Schuyler		7.5
1894.			
Jan. 10			60.0
21			66.1
Mar. 4			80.0
24			60.0
June 24			6.5
Sept. 5			.9
Dec. 4			1.0
6			3.0
1895.			
Mar. 6	J. B. Lippincott		22.7
Apr. 3	....do		17.2
Sept. 4	A. P. Davis and J. B. Lippincott		1.57
Nov. 13	J. B. Lippincott	0.45	3.46
1896.			
Feb. 1	J. B. Lippincott	.70	7.82
2	....do	1.10	18.3
June 4	....do	.50	6.09
5	....do	.60	8.31
Dec. 18	....do		3.96
19	....do	.54	2.66

Monthly discharge of Tejon House Creek at Tejon ranch house, Kern County, Cal., for 1895–96.

[Drainage area, 17 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1895.						
January	93.0	5.0	13.6	0.80	0.92	836
February	44.0	7.0	26.1	1.53	1.59	1,450
March	33.0	11.0	19.0	1.12	1.29	1,170
April	49.0	16.3	24.7	1.45	1.62	1,470
May	34.0	9.0	18.3	1.08	1.24	1,130
June	8.0	3.1	5.2	.306	.34	309
July	3.0	1.2	2.0	.118	.14	123
August	1.5	1.2	1.3	.076	.09	80
September	1.6	1.6	1.6	.094	.10	95
The period						6,660
1895–96.						
October	4.0	2.0	2.7	.159	.18	166
November	5.0	3.5	3.9	.229	.26	232
December	6.9	5.0	5.5	.323	.37	338
January	13.1	5.0	5.6	.32	.37	344
February	12.0	3.5	6.4	.38	.40	368
March	13.1	6.0	10.8	.65	.75	664
April	18.3	6.0	11.3	.66	.73	672
May	15.6	7.0	11.9	.69	.79	732
June	6.9	5.0	5.4	.32	.36	321
The period						3,840
1896.						
October	2.7	2.7	2.7	.16	.18	166
November	2.7	2.7	2.7	.16	.18	161

SALT AND SAN EMIGDIO CREEKS IN KERN COUNTY, CAL.

Salt Creek lies west of Tejon House Creek. The drainage basin is similar to that of the others of this group. In area it covers 35 square miles, as indicated by the Wheeler map. The discharge has not been measured, but it is small and spasmodic. To the west of Salt Creek, and also in the extreme southern limits of this valley, is San Emigdio Creek, which flows from the same group of mountains. Its usual summer discharge is reported on good authority to be about 3 second-feet. A flume has been placed in the bed of the creek and rated by the Kern County Land Co. A few orange groves are irrigated from this flume. The area drained is estimated to be 54 square miles.

Monthly discharge of San Emigdio Creek at San Emigdio ranch house, California, for 1894–95.

[Drainage area, 54 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1894.						
September	2.0	1.6	1.8	0.033	0.04	107
1894–95.						
October	2.3	1.5	1.7	.031	.04	105
November	1.5	1.5	1.5	.028	.03	89
December	38.2	1.5	4.7	.087	.10	289
January	97.0	1.8	8.4	.155	.17	516
February	60.0	2.0	4.6	.085	.09	255
March	20.3	2.4	3.7	.070	.08	228
April	60.0	1.8	3.9	.072	.08	232
May	3.7	1.8	2.4	.044	.05	148
June	3.6	1.8	2.4	.044	.05	143
July	2.6	1.8	2.2	.041	.04	135
August	2.6	2.0	2.2	.041	.04	135
September	2.2	2.0	2.1	.039	.04	125
The year	97.0	1.5	3.32	.061	.81	2,400
1895.						
October	9.7	2.0	2.3	.042	.04	141
November	7.0	2.2	3.0	.055	.06	179
December	4.7	2.8	3.3	.061	.07	203

NOTE.—These records were furnished by the Kern County Land Co.

POSO CREEK AT BASE OF FOOTHILLS, KERN COUNTY, CAL.

The following information regarding records of discharge of Poso Creek, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

The estimates of flow of this creek are based on a number of special observations, on general information from residents near it, and on the comparative discharge per square mile of other drainage areas.

Monthly discharge of Poso Creek at base of foothills, Kern County, Cal., for 1878–1884.[a]

[Drainage area, 289 square miles.]

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.				
November	0	0.0	0.0	0
December	0	.0	.0	0
January	23	0.08	0.09	1,414
February	40	.14	.15	2,221
March	20	.07	.08	1,230
April	72	.25	.28	4,284
May	52	.18	.21	3,197
June	17	.06	.07	1,012
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	18.7	.065	.88	13,400

[a] The entire record is estimated from the run-off of neighboring streams.

Monthly discharge of Poso Creek at base of foothills, Kern County, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1879–80.				
November	75	0.26	0.29	4,463
December	145	.50	.58	8,916
January	347	1.20	1.38	21,336
February	665	2.30	2.48	38,251
March	751	2.60	3.00	46,177
April	838	2.90	3.24	49,864
May	578	2.00	2.31	35,540
June	145	.50	.56	8,628
July	14	.05	.06	861
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	296	1.03	13.90	214,000
1880–81.				
November	58	.20	.22	3,451
December	145	.50	.58	8,916
January	145	.50	.58	8,916
February	289	1.00	1.04	16,050
March	289	1.00	1.15	17,770
April	289	1.00	1.12	17,197
May	289	1.00	1.15	17,770
June	145	.50	.56	8,628
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	137	.475	6.40	98,700
1881–82.				
November	0	.0	.0	0
December	35	.12	.14	2,152
January	35	.12	.14	2,152
February	43	.15	.16	2,388
March	145	.50	.58	8,916
April	145	.50	.56	8,628
May	29	.10	.12	1,783
June	0	.0	.0	0
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	36	.124	1.70	26,000
1882–83.				
November	43	.15	.17	2,559
December	14	.05	.06	861
January	43	.15	.17	2,644
February	43	.15	.16	2,388
March	231	.80	.92	14,204
April	145	.50	.56	8,628
May	119	.41	.47	7,317
June	0	.0	.0	0
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	29	.10	.12	1,783
The year	55.6	.193	2.63	40,400
1883–84.				
November	29	.10	.11	1,726
December	43	.15	.17	2,644
January	145	.50	.58	8,916
February	867	3.00	3.24	49,870
March	867	3.00	3.46	53,310
April	578	2.00	2.23	34,393
May	119	.41	.47	7,317
June	145	.50	.56	8,628
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	233	.805	10.82	167,000

WHITE RIVER AT BASE OF FOOTHILLS, TULARE COUNTY, CAL.

The following information regarding records of discharge of White River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

The estimates of flow of this river are based on a number of special observations, on general information from residents near it, and on discharge per square mile of near-by drainage areas.

Monthly discharge of White River at base of foothills, Tulare County, Cal., for 1878–1884.[a]

[Drainage area, 90 square miles.]

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.				
November	0	0.0	0.0	0
December	0	.0	.0	0
January	7	.08	.09	430
February	12	.14	.14	666
March	6	.07	.08	369
April	23	.25	.28	1,368
May	16	.18	.21	984
June	5	.06	.07	297
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	5.75	.064	.87	4,110
1879–80.				
November	23	.25	.28	1,368
December	45	.50	.50	2,767
January	108	1.20	1.38	6,640
February	207	2.30	2.48	11,906
March	234	2.60	3.00	14,388
April	261	2.90	3.24	15,530
May	180	2.00	2.31	11,067
June	45	.50	.56	2,677
July	5	.06	.07	307
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	92.3	1.03	13.82	666,000
1880–81.				
November	18	.20	.22	1,071
December	45	.50	.58	2,767
January	45	.50	.58	2,767
February	90	1.00	1.04	4,998
March	90	1.00	1.15	5,534
April	90	1.00	1.12	5,355
May	90	1.00	1.15	5,534
June	45	.50	.56	2,677
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	42.8	.475	6.40	30,700
1881–82.				
November	0	.0	.0	0
December	11	.12	.14	676
January	11	.12	.14	676
February	14	.15	.16	777
March	45	.50	.58	2,767

[a] The entire record is estimated from the run-off of neighboring streams.

Monthly discharge of White River at base of foothills, Tulare County, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1881–82.				
April	45	0.50	0.56	2,677
May	9	.10	.12	553
June	0	.0	.0	0
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	9	.10	.12	553
The year	12	.133	1.82	8,680
1882–83.				
November	14	.15	.17	833
December	5	.06	.07	307
January	14	.15	.17	861
February	14	.15	.16	777
March	72	.80	.92	4,427
April	45	.50	.56	2,677
May	36	.40	.46	2,213
June	0	.0	.0	0
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	9	.10	.12	553
The year	17.4	.193	2.63	12,600
1883–84.				
November	9	.10	.11	535
December	14	.15	.17	861
January	45	.50	.58	2,767
February	270	3.00	3.24	15,530
March	270	3.00	3.45	16,601
April	180	2.00	2.23	10,710
May	36	.40	.46	2,213
June	45	.50	.56	2,677
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	72.4	.804	10.80	51,900

WHITE RIVER NEAR HOT SPRINGS, CAL.

This station, which is located at the Vaughn ranch, 1 mile east of the White River-Hot Springs stage road, about 5 miles southwest of Hot Springs, was established January 18, 1911.

The gage is a vertical staff fastened to a willow tree on the right bank just above the observer's house.

The bed of the stream is composed of sand and gravel.

Discharge measurements are made by wading.

The gage-height record is furnished by David Vaughn. Record of discharge measurements is furnished by the United States Forest Service.

Estimates of daily and monthly discharge are withheld until additional measurements can be made.

Discharge measurements of White River near Hot Springs, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-ft.*
Jan. 18	H. J. Tompkins	1.4	2.0
May 11	do	1.6	4.0
1912.			
Apr. 25	J. E. Stewart	1.66	5.9
May 26	H. J. Tompkins	1.59	4.7

Daily gage height, in feet, of White River near Hot Springs, Cal., for 1911–12.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.									
1	.....	1.9	1.7	.....	1.7	1.5	1.3	.....	.....
2	.....	1.8	1.7	.....	1.7	1.5	1.3	.....	.....
3	.....	1.7	1.8	.....	1.7	1.5	1.3	.....	.....
4	.....	2.0	1.9	.....	1.7	1.5	1.25	.....	.....
5	.....	1.8	1.8	.....	1.7	1.5	1.25	.....	.....
6	.....	1.7	1.8	.....	1.7	1.45	1.25	.....	.....
7	.....	1.7	1.7	.....	1.7	1.45	1.25	.....	.....
8	.....	1.6	2.2	.....	1.7	1.45	1.2	.....	.....
9	.....	1.6	2.2	.....	1.7	1.4	1.2	.....	.....
10	.....	1.6	2.7	.....	1.65	1.4	1.2	.....	.....
11	.....	1.7	2.7	.....	1.6	1.4	1.2	.....	.....
12	.....	1.5	2.3	.....	1.6	1.4	1.2	.....	.....
13	.....	1.95	2.1	.....	1.6	1.4	1.2	.....	.....
14	.....	2.2	2.0	1.8	1.6	1.4	1.2	.....	.....
15	.....	1.9	2.0	1.8	1.6	1.4	1.15	.....	.....
16	.....	1.8	1.9	1.8	1.5	1.4	1.15	.....	.....
17	.....	1.8	1.9	1.8	1.5	1.4	1.2	.....	.....
18	1.4	1.8	1.9	1.8	1.5	1.4	1.18	.....	.....
19	1.4	1.8	1.8	1.8	1.5	1.4	1.2	.....	.....
20	1.4	1.8	1.8	1.75	1.5	1.4	1.2	.....	.....
21	2.1	1.8	2.0	1.7	1.5	1.35	1.2	.....	.....
22	1.7	1.8	2.0	1.7	1.5	1.35	1.15	.....	.....
23	1.6	1.7	1.9	1.7	1.5	1.35	1.15	.....	.....
24	1.95	1.7	2.1	1.7	1.5	1.35	1.15	.....	.....
25	2.0	1.7	2.0	1.7	1.5	1.35	1.15	.....	1.15
26	2.0	1.7	1.9	1.7	1.5	1.3	1.15	.....	1.15
27	1.7	1.8	1.9	1.9	1.5	1.3	1.15	.....	1.15
28	1.8	1.8	.....	1.8	1.5	1.3	1.15	.....	1.2
29	2.1	.....	.....	1.8	1.5	1.3	1.1	.....	1.2
30	1.9	.....	.....	1.7	1.5	1.3	.....	.....	1.2
31	2.3	.....	.....	.....	1.5	.....	.....	.....	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	1.25	1.2	1.2	1.4	1.5	1.4	1.5	1.6	1.5
2	1.25	1.2	1.2	1.4	1.5	1.4	1.5	1.6	1.5
3	1.3	1.2	1.2	1.4	1.5	1.4	1.5	1.6	1.5
4	1.3	1.2	1.4	1.4	1.5	1.4	1.5	1.6	1.5
5	1.3	1.2	1.4	1.4	1.5	1.4	1.55	1.6	1.45
6	1.3	1.2	1.3	1.4	1.5	1.45	1.55	1.55	1.45
7	1.25	1.2	1.4	1.35	1.5	1.5	1.55	1.62	1.45
8	1.25	1.2	1.4	1.35	1.45	1.5	1.5	1.6	1.45
9	1.25	1.2	1.3	1.35	1.45	1.5	2.05	1.6	1.45
10	1.25	1.7	1.3	1.3	1.45	1.5	1.9	1.65	1.45
11	1.25	1.5	1.3	1.7	1.45	1.6	2.1	1.65	1.45
12	1.25	1.4	1.3	1.6	1.45	1.6	2.1	1.65	1.45
13	1.25	1.4	1.3	1.6	1.45	1.5	2.0	1.7	1.45
14	1.25	1.3	1.25	1.5	1.45	1.5	1.9	1.7	1.45
15	1.25	1.3	1.25	1.5	1.45	1.5	1.8	1.7	1.5
16	1.25	1.3	1.25	1.5	1.45	2.0	1.8	1.75	1.5
17	1.25	1.3	1.5	1.5	1.45	1.8	1.8	1.7	1.45
18	1.25	1.3	1.45	1.5	1.45	1.7	1.75	1.65	1.45
19	1.25	1.3	1.45	1.5	1.45	1.6	1.75	1.6	1.4
20	1.25	1.3	1.4	1.5	1.45	1.7	1.7	1.6	1.4

Daily gage height, in feet, of White River near Hot Springs, Cal., for 1911–12—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
21	1.2	1.25	1.4	1.5	1.4	1.6	1.7	1.6	1.4
22	1.2	1.25	1.4	1.5	1.4	1.55	1.7	1.6	1.4
23	1.2	1.25	1.3	1.5	1.4	1.5	1.7	1.6	1.4
24	1.2	1.25	1.3	1.5	1.4	1.5	1.7	1.6	1.4
25	1.2	1.25	1.3	1.5	1.4	1.5	1.7	1.6	1.4
26	1.2	1.25	1.3	1.6	1.4	1.5	1.68	1.6	1.4
27	1.2	1.25	1.3	1.6	1.4	1.6	1.65	1.6	1.4
28	1.25	1.2	1.4	1.6	1.4	1.6	1.65	1.55	1.4
29	1.25	1.2	1.4	1.55	1.4	1.5	1.65	1.55	1.4
30	1.25	1.2	1.5	1.55	.....	1.5	1.65	1.55	1.4
31	1.25	.....	1.4	1.5	.....	1.5	.....	1.5	.....

NOTE.—River dry July 30 to Sept. 24, 1911.

DEER CREEK AT BASE OF FOOTHILLS, TULARE COUNTY, CAL.

The following information regarding records of discharge of Deer Creek, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

The estimates of flow of this creek are based on a number of special observations, on general information from residents near it, and on discharge per square mile of near-by drainage areas.

Monthly discharge of Deer Creek at base of foothills, Tulare County, Cal., for 1878–1884.[a]

[Drainage area, 110 square miles.]

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.				
November	0	0.0	0.0	0
December	0	0.0	.0	0
January	9	0.08	0.09	553
February	15	.14	.15	833
March	8	.07	.08	492
April	28	.25	.28	1,666
May	20	.18	.21	1,230
June	7	.06	.07	417
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	7.25	.066	.88	5,190
1879–80.				
November	29	.26	.29	1,726
December	55	.50	.58	3,382
January	132	1.20	1.38	8,116
February	253	2.30	2.48	14,553
March	286	2.60	3.00	17,585
April	319	2.90	3.24	18,982
May	220	2.00	2.31	13,527
June	55	.50	.56	3,273
July	6	.05	.06	369
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	113	1.03	13.90	81,500

[a] The entire record is estimated from the run-off of neighboring streams.

Monthly discharge of Deer Creek at base of foothills, Tulare County, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1880–81.				
November	22	0.20	0.22	1,309
December	55	.50	.58	3,382
January	55	.50	.58	3,382
February	110	1.00	1.04	6,109
March	110	1.00	1.15	6,764
April	110	1.00	1.12	6,545
May	110	1.00	1.15	6,764
June	55	.50	.56	3,273
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	52.3	.475	6.40	37,500
1881–82.				
November	0	.0	.0	0
December	23	.21	.24	1,414
January	23	.21	.24	1,414
February	17	.15	.16	944
March	55	.50	.58	3,382
April	55	.50	.56	3,273
May	11	.10	.12	676
June	0	.0	.0	0
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	11	.10	.12	676
The year	16.3	.148	2.02	11,800
1882–83.				
November	17	.15	.17	1,012
December	6	.05	.06	369
January	17	.15	.17	1,045
February	17	.15	.16	944
March	88	.80	.92	5,411
April	55	.50	.56	3,273
May	44	.40	.46	2,705
June	0	.0	.0	0
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	11	.10	.12	676
The year	21.3	.193	2.62	15,400
1883–84.				
November	11	.10	.11	655
December	17	.15	.17	1,045
January	55	.50	.58	3,382
February	330	3.00	3.24	18,982
March	330	3.00	3.46	20,291
April	220	2.00	2.23	13,091
May	44	.40	.46	2,705
June	55	.50	.56	3,273
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	88.5	.804	10.81	63,400

DEER CREEK AT HOT SPRINGS, CAL.

This station, which is located half a mile below Hot Springs post office in the Sequoia National Forest, and about 2½ miles above the mouth of Tyler Creek, was established October 7, 1910.

The gage is a vertical staff fastened to a tree on the left bank of the stream, 100 feet above the highway bridge from which discharge measurements are made at high water.

The banks are high and there is but one channel at all stages. The channel is composed of sand, gravel, and bowlders, and conditions favor good results.

Several ranches divert a small amount of water from Deer Creek for irrigation, but as the amount of tillable land is small, the agricultural products are sufficient only to supply the local demand.

In the vicinity of Hot Springs hot sulphur water issues from several large springs which have become noted for their curative properties.

This station is maintained in cooperation with the United States Forest Service.

Discharge measurements of Deer Creek at Hot Springs, Cal., 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-ft.*
Oct. 7	H. J. Tompkins	0.39	2.2
1911.			
Jan. 15	do	.55	6.1
Mar. 7	do	.50	7.2
May 13	do	.70	12
1912.			
May 25	do	.75	13

Daily gage height, in feet, of Deer Creek at Hot Springs, Cal., for 1910–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1				0.51	0.85	0.58	0.82	0.80			0.30	0.35
2							.80	.80		0.44	.31	.35
3		0.48	0.70		.65	.68	.78	.80	0.60	.45	.31	.36
4		.50	.58		.80	.70	.77	.81	.59	.45	.31	.37
5		.50	.53	.51	.69	.69	1.06	.81	.59	.44	.31	.37
6		.48			.63	.67	1.05	.80	.60	.43	.35	.37
7	0.39					.65	1.00	.80	.59	.43	.34	.37
8						1.35	.90	.80	.58	.42	.33	.36
9				.52	.61	1.12	.88	.80		.42	.35	.33
10				.80	.58	1.30	.88			.42	.35	.35
11	.50			.59	.60	1.00	.87	.70		.41	.35	.35
12	.49	.48		.52	.58	.90	.85	.70		.41	.35	.32
13	.48	.50		.51	.95	.90	.86	.70		.40	.35	.32
14				.51	.83	.82	.82	.70		.40	.36	.31
15				.52	.68	.81	.81	.70		.38	.36	.31
16				.52	.70	.80	.81	.69		.39	.35	.32
17					.68	.79	.81	.69		.39	.36	.34
18					.60	.72	.81	.69		.40	.35	.35
19				.50		.75	.80	.68		.39	.35	.34
20				.64	.60	.75	.80	.67			.35	.34
21				.85	.61	.84	.80	.66			.35	.35
22						.81	.81	.65			.35	.37
23			.55			.79	.80	.64			.36	.36
24				.84	.60	.82	.79	.63			.36	.35
25				.90		.79	.79	.61			.35	.36
26				.80		.78	.80	.61			.36	.37
27				.65	.60	.75	.80	.61		.31	.37	.38
28				1.00		.75	.82	.61	.44	.31	.37	.38
29				.80		.77	.80	.61	.45	.30	.37	.43
30						.78	.80	.61	.45	.31	.37	.39
31			.51	1.20		.78		.61		.31	.36	

Daily gage height, in feet, of Deer Creek at Hot Springs, Cal., for 1910–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	0.39	0.41	0.46	0.54	0.51	0.49	0.58	0.78	0.69
2	.40	.42	.46	.54	.51	.50	.62	.74	.68
3	.40	.42	.49	.51	.50	.50	.62	.70	.65
4	.40	.42	.50	.58	.50	.51	.62	.70	.62
5	.39	.41	.52	.51	.50	.51	.67	.74	.61
6	.39	.42	.60	.56	.50	.52	.62	.74	.60
7	.39	.42	.57	.55	.49	.53	.62	.78	.56
8	.40	.42	.52	.56	.49	.53	.68	.77	.58
9	.41	.42	.51	.56	.49	.53	1.00	.75	.58
10	.42	.62	.51	.58	.50	.53	.94	.76	.54
11	.42	.50	.51	.67	.50	.51	.90	.79	.52
12	.42	.43	.51	.58	.50	.56	.87	.80	.52
13	.42	.42	.51	.54	.49	.58	.79	.88	.52
14	.43	.43	.51	.57	.49	.56	.87	.98	.52
15	.43	.43	.51	.58	.49	.58	.83	.94	.52
16	.42	.43	.51	.58	.49	.68	.80	.94	.51
17	.42	.43	.51	.57	.49	.57	.80	.87	.49
18	.41	.44	.51	.52	.49	.57	.79	.85	.45
19	.42	.44	.55	.52	.50	.55	.75	.85	.42
20	.42	.45	.57	.52	.50	.55	.68	.84	.45
21	.43	.45	.53	.52	.49	.57	.65	.82	.45
22	.43	.45	.50	.52	.48	.55	.66	.82	.46
23	.43	.46	.50	.52	.49	.56	.65	.85	.49
24	.43	.46	.49	.51	.48	.56	.64	.78	.50
25	.43	.46	.47	.51	.48	.58	.70	.75	.49
26	.43	.46	.45	.51	.48	.58	.69	.78	.48
27	.43	.46	.45	.53	.49	.58	.73	.74	.47
28	.43	.46	.46	.52	.49	.58	.75	.72	.45
29	.43	.46	.45	.52	.49	.56	.72	.72	.47
30	.42	.46	.50	.51	.....	.59	.75	.73	.47
31	.42	.....	.53	.51	.....	.58	.....	.71	.....

Daily discharge, in second-feet, of Deer Creek at Hot Springs, Cal., for 1910–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	.....	.....	.....	5.1	18	7.2	16.5	15.5	8.0	3.5	1.0	1.7
2	.....	.....	.....	5.1	12	9	15.5	15.5	7.9	3.4	1.1	1.7
3	.....	4.3	11.5	5.1	9.7	11	15	15.5	7.8	3.6	1.1	1.9
4	.....	4.8	7.2	5.1	15.5	11.5	14.5	16	7.5	3.6	1.1	2.0
5	.....	4.8	5.7	5.1	11	11	30	16	7.5	3.4	1.1	2.0
6	.....	4.3	.....	5.2	8.9	10.5	30	15.5	7.8	3.2	1.7	2.0
7	2.4	.....	.....	5.3	8.6	9.7	26	15.5	7.5	3.2	1.6	2.0
8	.....	.....	.....	5.4	8.4	51	21	15.5	7.2	3.0	1.4	1.9
9	.....	.....	.....	5.4	8.1	34	19.5	15.5	7	3.0	1.7	1.4
10	.....	.....	.....	15.5	7.2	47	19.5	13.5	7	3.0	1.7	1.7
11	4.8	.....	.....	7.5	7.8	26	19	11.5	7	2.8	1.7	1.7
12	4.5	4.3	.....	5.4	7.2	21	18	11.5	6	2.8	1.7	1.2
13	4.3	4.8	.....	5.1	23	21	18.5	11.5	6	2.6	1.7	1.2
14	.....	.....	.....	5.1	17	16.5	16.5	11.5	6	2.6	1.9	1.1
15	.....	.....	.....	5.4	11	16	16	11.5	6	2.2	1.9	1.1
16	.....	.....	.....	5.4	11.5	15.5	16	11	6	2.4	1.7	1.2
17	.....	.....	.....	5.2	11	15	16	11	5	2.4	1.9	1.6
18	.....	.....	.....	5.0	7.8	12	16	11	5	2.6	1.7	1.7
19	.....	.....	.....	4.8	7.8	13.5	15.5	11	5	2.4	1.7	1.6
20	.....	.....	.....	9.3	7.8	13.5	15.5	10.5	5	2.0	1.7	1.6
21	.....	.....	.....	18	8.1	17.5	15.5	10	5	1.5	1.7	1.7
22	.....	.....	.....	15	8.0	16	16	9.7	5	1	1.7	2.0
23	.....	.....	6.3	13	7.9	15	15.5	9.3	4	1	1.9	1.9
24	.....	.....	.....	17.5	7.8	16.5	15	8.9	4	1	1.9	1.7
25	.....	.....	.....	21	7.8	15	15	8.1	4	1	1.7	1.9
26	.....	.....	.....	15.5	7.8	15	15.5	8.1	4	1	1.9	2.0
27	.....	.....	.....	9.7	7.8	13.5	15.5	8.1	4	1.1	2.0	2.2
28	.....	.....	.....	26	7.5	13.5	16.5	8.1	3.4	1.1	2.0	2.2
29	.....	.....	.....	15.5	.....	14.5	15.5	8.1	3.6	1.0	2.0	3.2
30	.....	.....	.....	12	.....	15	15.5	8.1	3.6	1.1	2.0	2.4
31	.....	.....	5.1	40	.....	15	.....	8.1	.....	1.1	1.9	.....

Daily discharge, in second-feet, of Deer Creek at Hot Springs, Cal., for 1910–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	2.4	2.8	3.8	6.0	5.1	4.5	7.2	15	11
2	2.6	3.0	3.8	6.0	5.1	4.8	8.5	13	11
3	2.6	3.0	4.5	5.1	4.8	4.8	8.5	11.5	9.7
4	2.6	3.0	4.8	7.2	4.8	5.1	8.5	11.5	8.5
5	2.4	2.8	5.4	5.1	4.8	5.1	10.5	13	8.1
6	2.4	3.0	7.8	6.6	4.8	5.4	8.5	13	7.8
7	2.4	3.0	6.9	6.3	4.5	5.7	8.5	15	6.6
8	2.6	3.0	5.4	6.6	4.5	5.7	11	14.5	7.2
9	2.8	3.0	5.1	6.6	4.5	5.7	26	13.5	7.2
10	3.0	8.5	5.1	7.2	4.8	5.7	23	14	6.0
11	3.0	4.8	5.1	10.5	4.8	5.1	21	15	5.4
12	3.0	3.2	5.1	7.2	4.8	6.6	19	15.5	5.4
13	3.0	3.0	5.1	6.0	4.5	7.2	15	19.5	5.4
14	3.2	3.2	5.1	6.9	4.5	6.6	19	25	5.4
15	3.2	3.2	5.1	7.2	4.5	7.2	17	23	5.4
16	3.0	3.2	5.1	7.2	4.5	11	15.5	23	5.1
17	3.0	3.2	5.1	6.9	4.5	6.9	15.5	19	4.5
18	2.8	3.4	5.1	5.4	4.5	6.9	15	18	3.6
19	3.0	3.4	6.3	5.4	4.8	6.3	13.5	18	3.0
20	3.0	3.6	6.9	5.4	4.8	6.3	11	17.5	3.6
21	3.2	3.6	5.7	5.4	4.5	6.9	9.7	16.5	3.6
22	3.2	3.6	4.8	5.4	4.3	6.3	10	16.5	3.8
23	3.2	3.8	4.8	5.4	4.5	6.6	9.7	18	4.5
24	3.2	3.8	4.5	5.1	4.3	6.6	9.3	15	4.8
25	3.2	3.8	4.0	5.1	4.3	7.2	11.5	13.5	4.5
26	3.2	3.8	3.6	5.1	4.3	7.2	11	15	4.3
27	3.2	3.8	3.6	5.7	4.5	7.2	12.5	13	4.0
28	3.2	3.8	3.8	5.4	4.5	7.2	13.5	12	3.6
29	3.2	3.8	3.6	5.4	4.5	6.6	12	12	4.0
30	3.0	3.8	4.8	5.1	.....	7.5	13.5	12.5	4.0
31	3.0	.....	5.7	5.1	.....	7.2	.....	12	.....

NOTE.—Daily discharge determined from a fairly well defined rating curve. Discharge interpolated on days in 1911 when the gage was not read except Jan. 22–23 and 30, and Feb. 2, which were estimated from the discharge of adjacent streams, and July 20–26, which were estimated from observer's statement that there was irrigation above the station July 20 to Aug. 5, 1911.

Monthly discharge of Deer Creek at Hot Springs, Cal., for 1910–1912.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1910–11.					
October	.....	.....	3.42	210	D.
November	.....	.....	4.11	245	D.
December	.....	.....	5.83	358	D.
January	40	4.8	10.4	640	B.
February	23	7.2	10.1	561	B.
March	51	7.2	17.4	1,070	B.
April	30	14.5	17.7	1,050	B.
May	16	8.1	11.6	713	B.
June	8.0	3.4	5.76	343	D.
July	3.6	1.0	2.25	138	C.
August	2.0	1.0	1.67	103	C.
September	3.2	1.1	1.78	106	C.
The year	51	.....	7.67	5,540	
1911–12.					
October	3.2	2.4	2.93	180	C.
November	8.5	2.8	3.56	212	C.
December	7.8	3.6	5.02	309	C.
January	10.5	5.1	6.10	375	B.
February	5.1	4.3	4.61	265	C.
March	11	4.5	6.42	395	B.
April	26	7.2	13.1	780	B.
May	25	11.5	15.6	959	B.
June	11	3.0	5.70	339	B.
The period	.....	.....	.....	3,810	

NOTE.—Values for 1910 are estimated from fragmentary record of daily discharge and from discharge of Tule River near Portersville.

TYLER CREEK NEAR HOT SPRINGS, CAL.

This station, which is located below the foot log at Thompson's ranch, about 1½ miles north of Hot Springs, in the Sequoia National Forest, about 4 miles above the junction with Deer Creek, was established January 16, 1911.

Three small irrigation ditches divert water above the station.

The gage is a vertical staff on the left bank 100 feet below the foot log, near the observer's house.

The bed of the stream is composed of bowlders and sand.

Discharge measurements are made from the foot log above the gage or by wading.

The gage-height record is furnished by D. B. Thompson.

Record of discharge measurements is furnished by the United States Forest Service.

Estimates of daily and monthly discharge are withheld until additional measurements can be made.

Discharge measurements of Tyler Creek near Hot Springs, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-feet.*
Jan. 16	H. J. Tompkins	1.00	4.0
Mar. 7	do	1.10	6.4
May 12	do	1.00	6.9
1912.			
Apr. 25	J. E. Stewart	1.14	8.0
May 26	H. J. Tompkins	1.00	4.9

Daily gage height, in feet, of Tyler Creek near Hot Springs, Cal., for 1911–12.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.									
1		1.3	1.1	1.2	1.15	1.0	0.8		
2		1.15		1.2	1.15				
3		1.1		1.2		1.0		0.5	0.4
4		1.2			1.15				
5		1.1	1.2			1.0	.7		
6		1.1	1.2	1.5		1.0		.5	
7		1.2	1.1		1.15	1.0			
8		1.1	1.85			1.0	.5		
9		1.1	1.7	1.3		1.0			.4
10		1.0	1.75		1.1	1.0		.5	
11		1.1		1.3					
12		1.05	1.5		1.1				
13		1.3	1.5			1.0			
14		1.25		1.3	1.1				
15		1.2	1.3						.4
16	1.0	1.2	1.3	1.2	1.1				
17		1.15	1.3		1.1		.5		
18	1.0	1.1		1.2	1.1			.5	
19	1.0	1.1	1.3	1.2	1.1	.9			
20	1.0	1.1		1.2					
21	1.25	1.1			1.1				.5
22	1.1								
23		1.1			1.1		.5	.5	
24	1.3	1.1		1.15		.9			
25	1.4	1.1	1.3	1.15	1.1				
26	1.2	1.1	1.3	1.2				.4	.6
27	1.2		1.2	1.2	1.1				
28	1.2	1.1	1.2						
29	1.55		1.2		1.05				.6
30	1.2		1.2				.5	.4	
31	1.45		1.2						

Daily gage height, in feet, of Tyler Creek near Hot Springs, Cal., for 1911–12—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911-12.									
1							1.2		1.1
2	0.6	0.7					1.2		
3			0.5				1.3		1.1
4							1.3		
5							1.3	1.2	
6							1.2		
7		.7	.5				1.2	1.2	1.1
8						1.0			
9	.7						1.3	1.2	
10			.6					1.2	1.1
11						1.0		1.2	
12		.7					1.6	1.2	
13	.6						1.5	1.2	1.0
14			.6			1.2	1.4		
15									1.0
16	.6	.6				1.3			
17								1.2	1.0
18			.6			1.1		1.2	.9
19		.6				1.1		1.2	
20	.6					1.1	1.2	1.1	
21						1.1		1.1	.9
22						1.1		1.1	
23		.5	.6			1.1		1.1	.9
24						1.1		1.1	
25	.7					1.1	1.2	1.1	.8
26						1.15		1.0	.9
27						1.2	1.2		
28			.7			1.2		1.1	.9
29	.7	.5				1.2	1.2		
30						1.2	1.2	1.1	
31						1.2			

TULE RIVER AT PORTERSVILLE, CAL.

The following information regarding records of discharge of Tule River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

Observations on Tule River were made at a point about 5 miles above Portersville, but below the head of the Pioneer canal. A number of measurements and imperfect gage-height records and other occasional observations form the basis of determining the discharge of the stream for a small portion of the period 1878 to 1884. The discharge for the remainder of the period was determined by comparisons of discharge per square mile with near-by drainages. The approximately known quantity diverted from the river by the Pioneer canal has been added to the estimated discharge of Tule River to give the quantity of water in the river at its point of entrance into the valley. These records are said "to average well with the estimates of discharge on other streams."

Monthly discharge of Tule River at Portersville, Cal., for 1878–1884.

[Drainage area, 437 square miles.]

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.				
November[a]	131	0.30	0.33	7,795
December[a]	131	.30	.35	8,055
January	57	.13	.15	3,505
February	87	.20	.21	4,832
March	61	.14	.16	3,751
April	118	.27	.30	7,021
May	105	.24	.28	6,456
June[a]	350	.80	.89	20,826
July[a]	35	.08	.09	2,152
August[a]	26	.06	.07	1,599
September[a]	26	.06	.07	1,547
October	74	.17	.20	4,550
The year	100	.229	3.10	72,100
1879–80.				
November	140	.32	.36	8,330
December	271	.62	.71	16,663
January	577	1.32	1.52	35,478
February	1,040	2.38	2.57	59,821
March	1,079	2.47	2.84	66,344
April	1,289	2.95	3.28	76,701
May	1,040	2.38	2.75	63,946
June	721	1.65	1.84	42,902
July[a]	350	.80	.92	21,520
August[a]	87	.20	.23	5,349
September[a]	44	.10	.11	2,618
October[a]	44	.10	.12	2,705
The year	557	1.27	17.25	402,000
1880–81.[a]				
November	87	.20	.22	5,177
December	219	.50	.58	13,466
January	219	.50	.58	13,466
February	437	1.00	1.04	24,270
March	437	1.00	1.15	26,870
April	874	2.00	2.23	52,006
May	874	2.00	2.31	53,740
June	437	1.00	1.12	26,003
July	219	.50	.58	13,466
August	175	.40	.46	10,760
September	87	.20	.22	5,177
October	66	.15	.17	4,058
The year	344	.788	10.66	248,000
1881–82.[a]				
November	57	.13	.15	3,392
December	66	.15	.17	4,058
January	87	.20	.23	5,349
February	109	.25	.26	6,053
March	306	.70	.81	18,815
April	660	1.51	1.68	39,273
May	1,748	4.00	4.61	107,480
June	660	1.51	1.68	39,273
July	437	1.00	1.15	26,870
August	131	.30	.35	8,055
September	66	.15	.17	3,927
October	44	.10	.12	2,705
The year	364	.833	11.38	265,000

[a] Estimated from run-off of neighboring streams.

Monthly discharge of Tule River at Portersville, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1882–83.[a]				
November	66	0.15	0.17	3,927
December	66	.15	.17	4,058
January	87	.20	.23	5,349
February	87	.20	.21	4,832
March	437	1.00	1.15	26,870
April	656	1.50	1.67	39,034
May	874	2.00	2.31	53,740
June	874	2.00	2.23	52,006
July	350	.80	.92	21,521
August	87	.20	.23	5,349
September	66	.15	.17	3,927
October	44	.10	.12	2,705
The year	308	.705	9.58	223,000
1883–84.[a]				
November	44	.10	.11	2,618
December	66	.15	.17	4,058
January	262	.60	.69	16,109
February	1,748	4.00	4.31	100,546
March	1,311	3.00	3.46	80,610
April	874	2.00	2.23	52,006
May	2,185	5.00	5.76	134,350
June	3,059	7.00	7.81	182,023
July	2,622	6.00	6.92	161,220
August	874	2.00	2.31	53,740
September	350	.80	.89	20,826
October	175	.40	.46	10,760
The year	1,130	2.59	35.12	819,000

[a] Estimated from run-off of neighboring streams.

TULE RIVER NEAR PORTERSVILLE, CAL.

This station, which is located in the NW. ¼ NW. ¼ sec. 25, T. 21 S., R. 28 E., 100 feet below the wagon bridge near McFarland's ranch, about 1 mile above the mouth of South Fork, about 6 miles east of Portersville, and about 9 miles below the junction of North and Middle forks, was established April 8, 1901.

A few small irrigation ditches divert water above the point of measurement. Below the station canals divert water for use chiefly in irrigating citrus fruits in the vicinity of Portersville. The acquired water rights exceed the minimum flow of the stream.

The staff gage is in two sections on the right bank. No change has ever been made in the gage datum.

The cable was destroyed in the flood of January, 1909, and discharge measurements are now made from the bridge about 100 feet above the gage.

The channel is practically permanent and the velocity moderate.

Conditions favor accuracy of discharge data and results at this station are considered good, except that the high-water discharge of 1902 is excessive.

Discharge measurements of Tule River near Portersville, Cal., in 1901–1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
1901.			
Apr. 18	S. G. Bennett	2.50	233
May 22	J. B. Lippincott	2.85	338
June 10	S. G. Bennett	2.65	311
28	A. E. Chandler	2.00	148
July 29	S. G. Bennett	1.23	30
Oct. 18	do	1.00	18
Dec. 5	do	1.44	58
1902.			
Feb. 2	S. G. Bennett	1.33	43
Mar. 8	do	2.20	156
May 15	do	3.03	371
Oct. 2	L. M. Lawson	.92	15
1903.			
Feb. 13	S. G. Bennett	2.13	171
Apr. 1	do	4.50	1,087
2	do	3.87	747
June 9	R. S. Hawley	2.35	185
Nov. 19	S. G. Bennett	1.16	28
1904.			
Feb. 1	F. W. Huber	1.28	36
Apr. 1	W. B. Newhall	2.86	342
July 2	F. R. S. Buttemer	1.25	30
20	do	1.00	16
28	do	.90	10.2
Aug. 17	do	.85	7.9
Sept. 9	do	.76	6.9
Oct. 6	do	1.24	30
30	do	1.25	31
Nov. 15	do	1.20	26
29	do	1.18	25
Dec. 15	do	1.25	27
1905.			
Mar. 22	F. R. S. Buttemer	2.50	219
May 19	R. S. Hawley	3.00	355
June 13	do	2.27	163
July 26	do	1.16	25
Sept. 18	C. H. Lee	.92	10
26	Clapp and Holley	.91	8.0
Oct. 25	Hawley and Lee	1.10	15.5
1906.			
Feb. 15	C. H. Lee	3.02	429
Mar. 28	do	4.42	1,210
May 10	do	4.20	1,000
24	R. S. Hawley	3.62	602
May 26	C. H. Lee	6.75	2,950
June 1	do	4.65	1,240
8	do	4.10	909
22	R. S. Hawley	4.40	1,090
July 20	do	2.65	284
26	C. H. Lee	2.30	222
Sept. 27	R. S. Hawley	1.40	56
Nov. 15	do	1.40	59
24	do	1.44	62
1907.			
Apr. 26	W. F. Martin	3.45	582
June 3	do	3.08	391
Aug. 9	W. A. Lamb	1.25	44
Sept. 27	do	1.13	29
Nov. 10	do	1.37	56
1908.			
Feb. 24	W. F. Martin	2.54	220
May 8	W. A. Lamb	2.20	164
June 20	W. F. Martin	1.48	66
Aug. 29	W. V. Hardy	.72	6.4
1909.			
May 13	W. F. Martin	3.55	654
July 11	W. V. Hardy	2.15	193
Aug. 26	do	1.22	46
Oct. 26	do	1.20	43
1910.			
Feb. 10	J. E. Stewart	2.10	173
Mar. 22	W. B. Clapp	2.34	224
Apr. 7	J. E. Stewart	2.30	210
7	do	2.30	217
May 11	do	2.18	189
June 2	do	1.62	90
July 11	W. V. Hardy	.88	19
11	do	.88	20
Aug. 20	J. E. Stewart	.58	5.8
Oct. 9	do	.75	11
1911.			
Jan. 21	H. J. Tompkins	2.60	312
June 8	W. V. Hardy	2.39	229
1912.			
Apr. 23	J. E. Stewart	1.94	126
May 27	H. J. Tompkins	2.09	168

Daily gage height, in feet, of Tule River near Portersville, Cal., for 1901–1912.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1901.						1901.					
1	3.1	3.1	1.9	1.2	1.0	16	3.2	2.2	1.4	1.0	0.75
2	3.1	3.1	1.85	1.0	1.0	17	3.25	2.25	1.4	1.0	.8
3	3.0	2.95	1.8	1.0	1.0	18	3.2	2.35	1.4	1.0	.85
4	2.9	2.85	1.8	1.1	1.0	19	3.15	2.3	1.4	1.0	.95
5	2.9	2.9	1.7	1.1	1.0	20	3.1	2.25	1.4	1.0	.95
6	3.0	2.8	1.6	1.05	1.0	21	3.0	2.2	1.35	1.0	.95
7	3.1	2.7	1.55	1.05	1.0	22	2.85	2.2	1.35	1.0	.95
8	3.1	2.9	1.55	1.05	1.0	23	2.8	2.2	1.35	1.0	.95
9	3.1	2.8	1.55	1.0	.95	24	2.7	2.15	1.35	1.0	1.0
10	3.4	2.6	1.5	1.0	.95	25	3.9	2.1	1.35	1.0	1.1
11	3.2	2.45	1.5	1.0	.9	26	3.0	2.1	1.3	1.0	1.1
12	3.3	2.5	1.5	1.0	.9	27	3.1	2.1	1.25	1.0	1.05
13	3.3	2.5	1.45	1.0	.8	28	3.1	1.9	1.2	1.0	1.05
14	3.2	2.4	1.45	1.0	.75	29	3.0	1.95	1.2	1.0	1.05
15	3.2	2.3	1.4	1.0	.75	30	3.0	1.95	1.2	1.0	1.05
						31	2.9	.....	1.2	1.0	.....

Daily gage height, in feet, of Tule River near Portersville, Cal., for 1901–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901–2.												
1	1.05	1.35	1.45	1.35	1.35	2.4	2.6	2.9	2.8	1.6	1.1	0.98
2	1.05	1.35	1.45	1.35	1.35	4.4	2.7	2.9	2.7	1.55	1.1	.98
3	1.05	1.3	1.45	1.35	1.35	2.8	2.5	2.8	2.6	1.55	1.1	.96
4	1.1	1.3	1.4	1.35	1.35	2.4	2.65	2.8	2.8	1.55	1.1	.94
5	1.1	1.3	1.4	1.3	1.35	2.3	2.7	2.8	2.7	1.5	1.08	.94
6	1.1	1.3	1.4	1.3	1.4	2.2	2.65	2.85	2.6	1.5	1.08	.92
7	1.05	1.3	1.45	1.3	1.4	2.2	7.2	2.9	2.6	1.5	1.05	.92
8	1.05	1.25	1.45	1.3	1.4	2.2	4.0	2.9	2.6	1.45	1.05	.92
9	1.0	1.25	1.5	1.3	1.4	5.6	3.7	3.0	2.6	1.5	1.03	.92
10	1.0	1.3	1.5	1.35	1.4	3.0	3.5	3.0	2.55	1.4	1.08	.92
11	1.0	1.4	1.5	1.35	1.35	2.8	3.4	3.1	2.45	1.35	1.08	.9
12	1.05	1.4	1.45	1.4	1.35	2.6	3.3	3.0	2.35	1.35	1.08	.9
13	1.05	1.35	1.4	1.4	1.35	2.5	3.2	3.05	2.35	1.3	1.06	.9
14	1.05	1.35	1.4	1.35	1.4	2.4	3.1	3.0	2.3	1.3	1.06	.9
15	1.05	1.35	1.4	1.3	1.4	2.3	3.15	3.0	2.25	1.25	1.06	.9
16	1.0	1.35	1.4	1.25	1.4	2.2	3.2	3.0	2.15	1.2	1.06	.9
17	1.0	1.3	1.4	1.3	1.4	2.0	3.3	3.0	2.1	1.2	1.06	.92
18	1.0	1.3	1.4	1.35	1.4	2.2	3.3	2.95	2.1	1.2	1.06	.92
19	1.0	1.3	1.4	1.4	1.45	2.5	3.4	2.9	2.05	1.2	1.06	.94
20	1.05	1.3	1.4	1.4	1.6	2.4	3.5	2.8	2.0	1.2	1.06	.96
21	1.05	1.3	1.35	1.35	1.6	2.35	3.7	2.7	1.9	1.2	1.06	.95
22	1.05	1.3	1.35	1.35	2.0	2.25	3.0	2.65	1.85	1.2	1.08	.95
23	1.0	1.3	1.35	1.35	1.75	2.35	3.0	2.65	1.8	1.2	1.08	.95
24	1.0	1.3	1.3	1.4	1.8	2.35	3.0	2.6	1.75	1.18	1.04	.95
25	1.0	1.3	1.3	1.4	1 85	3.0	2.9	2.65	1.75	1.15	1.04	.95
26	1.0	1.3	1.3	1.4	4.2	3.0	2.85	2.75	1.7	1.18	1.02	.95
27	1.6	1.3	1.3	1.4	4.4	3.0	2.8	2.8	1.7	1.2	1.02	.95
28	1.8	1.35	1.3	1.35	2.7	2.6	2.85	3.0	1.65	1.2	1.01	.95
29	1.65	1.45	1.3	1.35	.....	2.3	2.9	2.9	1.6	1.18	1.0	.94
30	1.45	1.55	1.3	1.35	.....	2.3	2.9	2.8	1.6	1.15	1.0	.94
31	1.35	.....	1.3	1.35	.....	2.5	.....	2.8	.....	1.14	1.0	.....
1902–3.												
1	.92	1.18	1.35	1.4	3.0	2.1	4.7	3.0	2.5	1.6	1.1	.88
2	.92	1.18	1.35	1.38	2.6	2.1	4.0	3.1	2.5	1.5	1.08	.85
3	.9	1.18	1.35	1.38	2.3	2.3	3.6	3.2	2.5	1.5	1.07	.85
4	.9	1.15	1.35	1.4	2.4	2.8	3.4	3.2	2.5	1.4	1.06	.85
5	.92	1.15	1.35	1.38	2.2	2.5	3.3	3.2	2.5	1.44	1.04	.85
6	.92	1.15	1.35	1.4	2.1	2.3	3.0	3.2	2.5	1.42	1.03	.88
7	.94	1.15	1.35	1.42	2.1	2.2	3.0	3.2	2.5	1.4	1.02	.88
8	.96	1.15	1.35	1.4	2.5	2.2	3.0	3.2	2.4	1.4	1.01	.88
9	.98	1.15	1.35	1.4	2.3	2.3	3.0	3.2	2.3	1.38	1.0	.9
10	1.0	1.4	1.35	1.4	2.3	2.3	3.7	3.2	2.3	1.36	1.0	.9
11	1.02	2.0	2.3	1.4	2.3	2.3	3.3	3.3	2.2	1.35	1.0	.9
12	1.04	1.7	1.9	1.38	2.2	2.3	3.2	3.4	2.2	1.34	1.0	.9
13	1.04	1.5	1.65	1.38	2.1	2.3	3.1	3.3	2.2	1.32	1.0	.85
14	1.03	1.45	1.55	1.38	2.1	2.5	3.0	3.3	2.2	1.3	1.0	.85
15	1.03	1.4	1.53	1 38	2.1	2.5	2.9	3.2	2.2	1.28	1.0	.85
16	1.02	1.35	1.5	1.38	2.0	2.4	2.9	3.0	2.1	1.26	.95	.85
17	1.02	1.35	1.5	1.38	2.0	2.4	2.8	2.9	2.1	1.24	.95	.9
18	1.02	1.35	1.48	1.38	2.0	2.2	2.8	2.9	2.1	1.22	.95	.9
19	1.0	1.7	1.45	1.38	2.1	2.2	2.7	2.8	2.0	1.2	.9	.85
20	1.0	1.55	1.44	1.38	2.1	2.2	2.7	2.7	2.0	1.2	.9	.89
21	.98	1.5	1.43	1.37	2.1	2.2	2.8	2.7	1.9	1.2	.9	.89
22	.96	1.45	1.42	1.37	2.1	2.2	2.8	2.6	1.9	1.18	.9	.89
23	.94	1.4	1.42	1.37	2.1	2.4	3.0	2.6	1.9	1.18	.9	.89
24	1.7	1.4	1.42	1.37	2.1	2.8	3.2	2.5	1.8	1.15	.9	.89
25	1.4	1.4	1.42	1.45	2.1	3.7	3.3	2.4	1.8	1.15	.9	.89
26	1.3	1.35	1.42	1.6	2.1	3.2	3.2	2.3	1.8	1.15	.90	.89
27	1.25	1.35	1.52	5.0	2.1	2.8	3.1	2.2	1.7	1.14	.88	.92
28	1.25	1.35	1.5	7.6	2.1	2.9	3.0	2.4	1.6	1.13	.88	.93
29	1.2	1.35	1.48	3.5	.....	3.2	2.9	2.5	1.6	1.12	.88	.95
30	1.2	1.35	1.45	2.4	.....	3.3	2.9	2.6	1.6	1.11	.88	.96
31	1.2	.....	1.43	3.6	.....	3.3	.....	2.6	.....	1.11	.88	.....
1903–4.												
1	.98	1.0	1.2	1.2	1.2	1.9	2.9	2.5	2.1	1.2	.85	.85
2	1.0	1.0	1.1	1.2	1.2	1.9	2.8	2.6	2.05	1.15	.85	.8
3	1.0	1.0	1.1	1.2	1.2	1.85	2.7	2.6	2.0	1.15	.85	.8
4	1.02	1.0	1.1	1 2	1.2	1.85	2.7	2.6	2.0	1.2	.85	.8
5	1.01	1.0	1.1	1.2	2.0	1.85	2.75	2.7	2.0	1.2	.9	.8

Daily gage height, in feet, of Tule River near Portersville, Cal., for 1901–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903–4.												
6	1.0	1.0	1.2	1.2	1.8	1.7	2.8	2.8	1.95	1.15	0.9	0.8
7	1.0	1.1	1.2	1.2	1.6	1.7	2.8	2.8	1.9	1.15	.9	.8
8	1.0	1.1	1.2	1.2	1.4	1.6	2.65	2.8	1.85	1.15	.9	.8
9	1.0	1.1	1.2	1.2	1.35	1.6	2.45	2.8	1.8	1.15	.9	.8
10	1.0	1.1	1.1	1.2	1.35	1.6	2.6	2.85	1.75	1.1	.85	.8
11	1.0	1.1	1.1	1.2	1.35	2.35	2.8	2.85	1.75	1.1	.85	.8
12	.98	1.1	1.1	1.2	1.35	2.0	2.75	2.9	1.7	1.1	.85	.8
13	.98	1.1	1.2	1.2	1.8	1.9	2.75	2.9	1.65	1.05	.85	.8
14	1.0	1.1	1.2	1.2	1.6	1.85	2.75	2.9	1.6	1.05	.85	.8
15	1.0	1.1	1.2	1.2	1.45	1.9	2.7	2.85	1.55	1.05	.85	.8
16	1.0	1.1	1.2	1.15	4.1	2.0	2.6	2.8	1.5	1.05	.85	.8
17	1.0	1.1	1.2	1.15	3.1	2.0	2.5	2.75	1.45	1.0	.85	.8
18	1.0	1.1	1.2	1.4	2.1	2.1	2.4	2.65	1.4	1.0	.85	.85
19	.98	1.2	1.2	1.3	1.9	2.1	3.15	2.6	1.4	1.0	.8	.85
20	.98	1.2	1.2	1.3	1.85	3.0	2.9	2.55	1.4	1.0	.8	.9
21	.98	1.2	1.2	1.3	1.8	2.9	2.7	2.5	1.4	.95	.8	.9
22	.95	1.2	1.2	1.3	1.75	2.4	2.6	2.45	1.4	.95	.8	.95
23	.95	1.2	1.2	1.3	1.7	6.15	2.5	2.4	1.35	.95	.85	.95
24	.95	1.2	1.2	1.25	1.65	3.2	2.4	2.4	1.35	.95	.85	1.0
25	.95	1.2	1.2	1.25	1.65	2.7	2.4	2.35	1.3	.9	.9	2.1
26	.95	1.1	1.2	1.25	1.6	2.5	2.7	2.3	1.3	.9	.9	1.7
27	.95	1.1	1.2	1.2	1.6	2.4	2.6	2.3	1.25	.9	.9	1.55
28	.95	1.1	1.2	1.2	2.7	3.2	2.55	2.3	1.25	.9	.95	1.4
29	.95	1.2	1.2	1.2	2.0	3.8	2.55	2.25	1.2	.85	.95	1.3
30	.95	1.2	1.2	1.2	.....	3.7	2.5	2.2	1.2	.85	.9	1.25
31	.95	.....	1.2	1.2	.....	3.3	.....	2.1	.....	.85	.85	.....
1904–5.												
1	1.2	1.25	1.2	1.7	1.45	1.7	2.3	2.5	2.55	1.7	1.05	.9
2	1.2	1.3	1.2	1.7	2.3	1.7	2.4	3.0	2.55	1.7	1.05	.9
3	1.2	1.3	1.2	1.65	2.0	1.75	2.5	2.9	2.5	1.65	1.05	.9
4	1.2	1.3	1.2	1.6	2.0	1.75	2.6	2.8	2.45	1.6	1.05	.9
5	1.2	1.3	1.2	1.6	1.9	1.75	2.55	2.5	2.45	1.55	1.05	.9
6	2.0	1.3	1.2	1.6	1.8	1.8	2.55	2.5	2.45	1.5	1.0	.9
7	1.6	1.3	1.2	1.55	1.75	1.8	2.55	3.05	2.4	1.45	1.0	.9
8	1.4	1.25	1.2	1.55	1.7	1.8	2.5	3.2	2.35	1.4	1.0	.9
9	1.8	1.25	1.25	1.5	1.65	1.75	2.5	2.95	2.35	1.4	1.0	.9
10	1.5	1.25	1.25	1.5	1.6	1.75	2.4	2.85	2.3	1.4	1.0	.95
11	1.7	1.2	1.25	1.5	1.6	1.7	2.35	2.8	2.3	1.4	1.0	.95
12	2.3	1.2	1.25	1.45	1.6	1.75	2.3	2.75	2.4	1.35	.95	.95
13	1.8	1.2	1.25	1.45	1.6	3.1	2.35	2.7	2.35	1.35	.95	.95
14	1.7	1.2	1.25	1.4	1.6	2.8	2.35	2.9	2.3	1.3	.95	1.0
15	1.6	1.2	1.25	1.4	1.7	2.6	2.4	3.0	2.25	1.3	.95	.95
16	1.55	1.2	1.25	1.4	1.75	3.0	2.35	3.2	2.25	1.3	.95	.95
17	1.5	1.2	1.25	1.4	1.75	3.0	2.3	3.3	2.1	1.25	.95	.95
18	1.45	1.2	1.25	1.4	1.8	2.9	2.3	3.1	2.0	1.25	.95	.95
19	1.4	1.2	1.25	1.4	1.8	4.1	2.5	3.0	1.95	1.2	.95	.95
20	1.35	1.2	1.25	1.4	1.75	3.7	2.45	3.0	1.9	1.2	.95	.95
21	1.35	1.2	1.3	1.6	1.75	3.5	2.45	2.95	1.85	1.2	.95	.95
22	1.3	1.2	1.3	1.6	1.75	3.1	2.4	2.8	1.8	1.15	.95	.95
23	1.3	1.2	1.35	1.5	1.7	2.8	2.4	2.7	1.8	1.15	.95	.95
24	1.3	1.2	1.4	1.5	1.7	2.5	2.35	2.75	1.8	1.1	.95	.95
25	1.3	1.2	1.65	1.5	1.7	2.3	2.4	2.8	1.9	1.1	.95	.95
26	1.3	1.2	1.45	1.5	1.7	2.3	2.4	2.8	1.85	1.15	.95	.95
27	1.25	1.2	1.4	1.5	1.7	2.3	2.45	2.8	1.85	1.1	.95	.95
28	1.25	1.2	1.35	1.5	1.7	2.25	2.5	2.75	1.8	1.1	.9	1.0
29	1.25	1.2	1.35	1.5	.....	2.9	2.6	2.7	1.8	1.15	.9	1.0
30	1.25	1.2	1.3	1.45	.....	2.4	2.7	2.65	1.75	1.05	.9	1.0
31	1.25	.....	1.7	1.4	.....	2.3	.....	2.6	.....	1.05	.9	.....
1905–6.												
1	1.1	1.05	1.9	2.1	2.0	2.4	4.8	3.6	4.6	3.7	2.05	1.5
2	1.05	1.1	1.85	2.07	2.0	2.4	4.6	3.6	4.6	3.8	2.0	1.5
3	1.05	1.1	1.85	2.0	2.0	2.4	4.0	3.7	4.4	3.7	1.95	1.5
4	1.0	1.1	1.8	1.9	2.0	3.6	3.8	3.8	4.2	3.6	1.95	1.45
5	1.0	1.1	1.8	1.9	2.0	3.2	3.8	4.0	4.1	3.5	1.9	1.45
6	1.0	1.1	1.8	1.9	2.0	3.1	4.4	3.9	4.0	3.55	1.9	1.45
7	1.0	1.1	1.8	1.87	2.0	3.0	4.0	3.9	4.0	3.5	1.85	1.45
8	1.0	1.15	1.8	1.85	2.2	2.9	3.6	4.1	4.1	3.2	1.85	1.45
9	1.05	1.15	1.8	1.83	2.15	2.8	3.6	4.1	4.2	3.2	1.8	1.4
10	1.05	1.15	1.8	1.8	2.1	2.7	3.8	4.4	4.3	3.15	1.8	1.4

Daily gage height, in feet, of Tule River near Portersville, Cal., for1 901–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905–6.												
11	1.0	1.15	1.8	1.8	2.05	2.7	3.8	4.4	4.4	3.1	1.8	1.4
12	1.0	1.15	1.8	2.0	2.0	6.6	3.6	4.5	4.5	3.0	1.75	1.4
13	.95	1.15	1.8	5.65	2.0	5.7	3.6	4.25	4.4	2.9	1.7	1.4
14	1.0	1.15	1.8	7.35	2.0	4.2	3.6	4.0	4.3	2.85	1.7	1.4
15	1.0	1.2	1.8	3.85	3.1	8.35	3.6	4.0	4.35	2.8	1.65	1.4
16	1.0	1.2	1.8	3.3	2.8	8.5	3.6	4.1	4.3	2.75	1.65	1.4
17	1.0	1.3	1.8	3.0	2.7	7.0	3.6	4.1	4.35	2.75	1.6	1.4
18	1.0	1.3	1.9	2.8	2.6	5.0	3.6	4.1	4.3	2.7	1.6	1.35
19	1.0	1.3	1.9	7.0	2.5	4.5	3.6	4.1	4.35	2.7	1.6	1.35
20	1.0	1.7	1.9	4.1	2.5	4.2	3.7	4.0	4.35	2.65	1.55	1.35
21	1.0	1.7	1.9	3.3	2.7	4.2	3.8	3.9	4.3	2.6	1.55	1.35
22	1.0	1.65	1.9	2.9	2.65	4.2	4.0	3.8	4.4	2.5	1.55	1.35
23	1.0	1.65	1.9	2.7	2.6	4.2	4.25	3.7	4.3	2.45	1.55	1.35
24	1.0	1.65	1.85	2.5	2.5	5.4	4.0	3.65	4.2	2.4	1.55	1.4
25	1.0	1.6	1.85	2.4	2.45	6.0	3.7	3.6	4.0	2.35	1.55	1.45
26	1.0	1.6	1.9	2.3	2.4	7.25	3.6	6.4	3.95	2.3	1.55	1.4
27	1.0	2.1	2.0	2.2	2.4	5.2	3.4	6.55	3.9	2.25	1.5	1.4
28	1.0	1.95	2.0	2.15	2.4	4.5	4.6	6.5	3.7	2.25	1.5	1.35
29	1.0	1.85	2.1	2.1	.....	4.3	3.8	5.4	3.7	2.2	1.5	1.35
30	1.05	1.9	2.1	2.05	.....	4.3	3.7	5.0	3.7	2.15	1.5	1.3
31	1.05	.....	2.1	2.03	.....	5.4	.....	4.7	.....	2.1	1.5	.....
1906–7.												
1	1.3	1.4	1.45	2.3	3.1	2.4	3.0	3.0	2.9	2.1	1.3	1.15
2	1.3	1.4	1.45	1.95	3.0	2.4	6.0	2.9	2.9	2.15	1.3	1.2
3	1.3	1.4	1.45	1.9	3.0	2.4	5.1	2.85	2.9	2.1	1.3	1.15
4	1.3	1.4	1.45	1.9	2.95	2.4	4.0	2.8	3.0	2.0	1.25	1.15
5	1.3	1.4	1.5	2.7	2.85	2.6	3.9	2.8	2.9	2.0	1.25	1.15
6	1.3	1.4	1.5	2.25	2.7	2.6	3.8	2.8	2.9	1.9	1.25	1.1
7	1.3	1.4	1.5	2.25	2.6	2.7	3.8	2.75	2.85	1.9	1.25	1.1
8	1.3	1.4	1.6	2.65	2.6	2.9	3.85	2.75	2.8	1.85	1.25	1.1
9	1.3	1.4	1.65	2.25	2.55	2.7	3.85	2.7	2.75	1.8	1.25	1.1
10	1.3	1.4	2.0	2.2	2.5	2.9	3.8	2.7	2.7	1.75	1.25	1.1
11	1.3	1.4	2.6	2.2	2.45	2.8	3.8	2.7	2.8	1.7	1.2	1.1
12	1.3	1.4	2.4	2.2	2.4	2.85	3.8	2.75	2.9	1.6	1.2	1.1
13	1.3	1.4	2.0	2.6	2.35	2.7	3.8	2.8	2.8	1.5	1.2	1.1
14	1.3	1.4	1.8	2.2	2.35	2.75	3.8	2.85	2.7	1.5	1.2	1.1
15	1.3	1.4	1.5	3.2	2.3	2.7	4.3	2.9	2.6	1.5	1.2	1.1
16	1.3	1.4	1.65	2.7	2.3	2.6	4.0	2.9	2.55	1.5	1.2	1.1
17	1.3	1.4	1.65	3.4	2.5	2.6	3.85	2.9	2.55	1.5	1.2	1.15
18	1.3	1.4	1.65	2.7	2.3	2.6	3.7	2.85	2.5	1.5	1.2	1.15
19	1.3	1.4	1.65	2.2	2.25	2.65	3.7	3.0	2.5	1.5	1.2	1.15
20	1.3	1.45	1.65	2.1	2.2	2.6	3.8	3.2	2.45	1.5	1.2	1.15
21	1.3	1.45	1.65	2.15	2.2	2.7	3.75	3.1	2.45	1.5	1.2	1.15
22	1.3	1.45	1.65	2.15	3.85	2.65	3.7	3.0	2.4	1.5	1.2	1.1
23	1.35	1.45	1.65	2.15	3.2	2.7	3.65	2.9	2.35	1.45	1.2	1.1
24	1.35	1.45	1.65	2.15	2.8	4.8	3.6	2.95	2.35	1.45	1.15	1.1
25	1.35	1.45	1.65	2.2	2.8	3.6	3.5	2.9	2.3	1.4	1.15	1.1
26	1.35	1.45	2.3	2.2	2.8	3.5	3.4	2.9	2.25	1.4	1.15	1.1
27	1.35	1.45	2.1	2.2	2.7	3.35	3.4	2.9	2.2	1.4	1.15	1.1
28	1.35	1.45	2.0	2.35	2.45	3.2	3.3	2.8	2.15	1.4	1.15	1.15
29	1.35	1.45	1.95	3.2	.....	3.0	3.2	2.8	2.1	1.35	1.15	1.15
30	1.35	1.45	1.9	3.2	.....	3.0	3.1	2.9	2.1	1.35	1.15	1.15
31	1.35	.....	1.9	3.2	.....	3.0	.....	2.9	.....	1.3	1.15	.....
1907–8.												
1	1.15	1.55	1.4	1.75	1.8	3.1	2.15	2.3	2.0	1.2	.85	.75
2	1.15	1.55	1.4	1.7	2.6	3.0	2.1	2.3	1.95	1.2	.85	.7
3	1.2	1.5	1.4	1.65	3.1	3.0	2.1	2.3	1.95	1.15	.85	.75
4	1.2	1.5	1.4	1.75	2.6	3.0	2.1	2.25	1.95	1.1	.85	.7
5	1.2	1.45	1.4	1.7	2.2	3.5	2.1	2.25	1.9	1.1	.85	.8
6	1.2	1.4	2.0	1.6	1.9	3.1	2.1	2.2	1.85	1.1	.85	.8
7	1.2	1.4	2.9	1.7	1.85	2.7	2.1	2.2	1.85	1.05	.85	.85
8	1.2	1.35	2.0	1.7	1.85	2.4	2.1	2.2	1.8	1.05	.85	.85
9	1.15	1.35	1.9	1.7	3.5	2.3	2.1	2.15	1.8	1.05	.85	.9
10	1.2	1.35	1.9	1.6	3.1	2.35	2.1	2.1	1.75	1.0	.9	.9
11	1.2	1.35	2.3	1.6	2.7	2.4	2.1	2.1	1.7	1.0	.85	.9
12	1.2	1.35	2.0	1.6	2.4	2.5	2.25	2.4	1.7	1.0	.85	.9
13	1.2	1.35	1.9	1.7	2.2	2.6	2.35	2.35	1.65	1.0	.8	.9
14	1.2	1.35	1.7	1.75	2.1	2.65	2.35	2.3	1.65	.95	.8	.9
15	1.2	1.35	1.7	2.4	2.0	2.7	2.35	2.2	1.6	.95	.8	.95

Daily gage height, in feet, of Tule River near Portersville, Cal., for 1901–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907–8.												
16	1.25	1.35	1.9	2.2	2.0	3.1	2.3	2.15	1.6	0.95	0.8	0.95
17	1.25	1.35	1.7	1.95	1.95	3.0	2.25	2.2	1.55	.95	.8	.95
18	1.25	1.35	1.7	1.9	1.95	2.95	2.25	2.2	1.55	.95	.8	.95
19	1.3	1.35	1.7	1.85	1.9	2.9	2.25	2.2	1.5	.9	.8	.95
20	1.35	1.35	1.6	1.85	1.9	2.8	2.2	2.2	1.5	.9	.8	.95
21	1.3	1.35	1.65	1.8	2.4	2.75	2.2	2.15	1.45	.9	.75	.95
22	1.3	1.35	1.65	1.8	4.6	2.7	2.4	2.1	1.45	.85	.75	.95
23	1.35	1.35	1.7	1.8	3.0	2.7	2.6	2.1	1.45	.85	.75	.95
24	1.4	1.35	1.75	2.5	2.55	2.65	2.3	2.05	1.4	.9	.8	1.1
25	1.4	1.35	1.75	2.7	2.55	2.6	2.3	2.1	1.4	.85	.8	1.4
26	1.5	1.35	1.8	2.25	2.6	2.6	2.3	2.1	1.4	.9	.75	1.2
27	1.6	1.35	1.8	2.0	2.6	2.5	2.3	2.05	1.35	.9	.75	1.15
28	1.6	1.35	2.0	1.95	2.6	2.4	2.35	2.0	1.3	.9	.7	1.1
29	1.6	1.35	2.0	1.9	3.2	2.3	2.4	2.05	1.2	.9	.8	1.1
30	1.55	1.35	1.9	1.85	.....	2.2	2.35	2.05	1.2	.9	.75	1.05
31	1.55	.....	1.8	1.8	.....	2.2	.....	2.0	.....	.9	.75	.....
1908–9.												
1	1.05	1.15	1.3	1.3	3.0	3.18	3.5	4.15	4.1	2.7	1.5	1.15
2	1.0	1.15	1.3	1.45	2.9	3.18	3.7	4.2	4.0	2.65	1.5	1.2
3	1.05	1.15	1.3	1.4	3.45	3.9	3.75	4.25	4.0	2.65	1.45	1.2
4	1.05	1.15	1.3	1.5	3.3	3.6	3.8	4.3	4.0	2.65	1.45	1.2
5	1.05	1.15	1.4	1.8	3.6	3.5	3.6	4.3	4.0	2.55	1.45	1.2
6	1.05	1.15	1.35	1.6	3.75	3.6	3.5	4.2	3.9	2.5	1.4	1.2
7	1.0	1.15	1.3	2.45	6.55	3.5	3.5	4.1	3.8	2.4	1.4	1.2
8	1.0	1.15	1.3	2.5	4.9	3.4	3.5	4.0	3.75	2.3	1.35	1.15
9	1.0	1.15	1.3	2.45	4.1	3.3	3.55	3.95	3.7	2.25	1.35	1.2
10	1.0	1.1	1.3	2.4	3.8	3.2	3.6	3.9	3.65	2.2	1.3	1.2
11	1.0	1.1	1.3	2.0	5.25	3.1	3.55	3.85	3.6	2.15	1.3	1.2
12	1.0	1.1	1.3	1.8	5.85	3.05	3.5	3.8	3.5	2.1	1.3	1.2
13	1.0	1.1	1.3	7.0	5.1	3.0	3.6	3.6	3.45	2.1	1.3	1.2
14	1.0	1.1	1.3	8.4	4.3	3.05	3.7	3.55	3.4	2.05	1.3	1.15
15	1.0	1.1	1.3	4.75	4.1	3.1	3.9	3.5	3.4	2.0	1.3	1.15
16	1.6	1.1	1.3	3.75	4.0	3.2	4.1	3.5	3.35	1.95	1.3	1.1
17	1.5	1.1	1.35	3.35	4.0	3.2	4.3	3.5	3.3	1.9	1.3	1.1
18	1.3	1.1	1.35	3.1	3.9	3.2	4.25	3.5	3.25	1.9	1.3	1.1
19	1.3	1.1	1.3	2.9	3.7	3.1	4.2	3.5	3.15	1.8	1.25	1.1
20	1.25	1.1	1.3	2.8	3.6	3.0	4.0	3.5	3.1	1.8	1.25	1.1
21	1.2	1.1	1.3	9.1	4.0	3.4	3.85	3.5	3.1	1.75	1.25	1.1
22	1.2	1.1	1.3	6.9	3.6	3.25	3.75	3.5	3.1	1.75	1.25	1.1
23	1.2	1.2	1.3	4.75	3.4	3.1	3.65	3.4	3.1	1.7	1.25	1.1
24	1.2	1.6	1.3	3.95	3.35	3.1	3.45	3.3	3.1	1.7	1.25	1.1
25	1.15	1.35	1.3	3.85	3.3	3.1	3.6	3.4	3.05	1.7	1.2	1.1
26	1.15	1.3	1.3	3.7	3.2	3.3	3.9	3.45	3.05	1.65	1.2	1.1
27	1.15	1.3	1.3	3.7	3.15	3.4	4.1	3.6	2.95	1.6	1.2	1.1
28	1.15	1.25	1.3	3.45	3.15	3.4	4.1	3.55	2.85	1.6	1.2	1.1
29	1.15	1.25	1.3	3.35	.....	3.9	4.1	3.5	2.75	1.5	1.2	1.15
30	1.15	1.25	1.3	3.2	.....	3.6	4.15	3.6	2.75	1.5	1.2	1.15
31	1.15	.....	1.3	3.1	.....	3.4	.....	3.8	.....	1.5	1.15	.....
1909–10.												
1	1.15	1.2	1.7	5.55	2.5	2.1	2.3	2.3	1.6	1.05	.7	.6
2	1.2	1.2	3.0	4.5	2.3	2.2	2.3	2.2	1.6	1.05	.7	.65
3	1.35	1.2	2.2	3.2	2.2	2.2	2.3	2.2	1.55	1.05	.7	.65
4	1.35	1.2	1.85	3.0	2.2	2.15	2.35	2.2	1.55	1.0	.7	.65
5	1.3	1.25	1.85	2.85	2.2	2.1	2.3	2.1	1.5	1.0	.7	.65
6	1.25	1.25	4.6	2.7	2.2	2.35	2.3	2.1	1.5	1.0	.65	.65
7	1.25	1.25	3.6	2.6	2.2	2.35	2.3	2.1	1.45	.95	.65	.7
8	1.2	1.25	9.5	2.55	2.15	2.35	2.3	2.1	1.45	.95	.65	.7
9	1.2	1.85	7.4	2.5	2.15	2.4	2.3	2.15	1.4	.95	.65	.7
10	1.2	1.8	5.0	2.4	2.15	2.35	2.3	2.15	1.4	.8	.65	.7
11	1.2	.....	3.4	2.3	2.1	2.3	2.5	2.15	1.35	.9	.6	.7
12	1.2	.....	2.9	2.25	2.1	2.25	2.5	2.15	1.3	.85	.6	.7
13	1.2	.....	2.7	2.2	2.1	2.25	2.4	2.15	1.25	.8	.6	.75
14	1.2	1.5	2.6	2.2	2.1	2.8	2.4	2.15	1.3	.8	.6	.8
15	1.2	1.45	2.5	2.5	2.1	2.4	2.4	2.1	1.3	.8	.55	.8
16	1.2	1.55	2.4	3.0	2.1	2.3	2.4	2.0	1.3	.8	.55	.9
17	1.2	1.5	2.35	2.7	2.1	2.3	2.4	2.0	1.25	.8	.55	.85
18	1.2	1.55	2.3	2.5	2.1	2.3	2.4	2.0	1.25	.9	.55	.85
19	1.2	1.6	2.3	2.3	2.1	2.3	2.4	1.95	1.25	1.0	.6	.8
20	1.2	1.6	2.35	2.2	2.1	2.35	2.4	1.9	1.2	.9	.6	.8

Daily gage height, in feet, of Tule River near Portersville, Cal., for 1901–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June.	July.	Aug.	Sept.
1909–10.												
21	1.2	1.6	2.3	2.2	2.1	2.35	2.5	1.9	1.2	0.85	0.6	0.8
22	1.2	1.6	2.35	2.3	2.05	2.35	2.45	1.9	1.15	.8	.6	.75
23	1.2	1.6	2.2	2.3	2.05	2.35	2.4	1.9	1.1	.8	.6	.7
24	1.2	1.65	2.15	2.5	2.05	2.35	2.35	1.85	1.1	.8	.6	.7
25	1.2	1.7	2.1	2.45	2.05	2.3	2.35	1.85	1.1	.8	.6	.7
26	1.2	2.5	2.1	2.4	2.0	2.3	2.35	1.8	1.1	.75	.6	.7
27	1.2	2.0	2.05	2.35	2.05	2.3	2.35	1.75	1.1	.75	.6	.7
28	1.2	1.85	2.05	2.3	2.1	2.3	2.35	1.7	1.05	.75	.6	.7
29	.....	1.7	2.0	2.3	.....	2.3	2.3	1.65	1.05	.7	.6	.7
30	.....	1.7	2.0	2.3	.....	2.3	2.3	1.6	1.05	.7	.6	.7
31	1.2	.....	3.0	2.3	.....	2.3	.....	1.6	.....	.7	.6	.....
1910–11.												
1	0.7	0.95	1.1	1.20	5.0	1.85	2.90	2.60	2.40	1.65	1.00	0.83
2	.7	1.0	1.1	1.20	3.10	1.88	2.95	2.55	2.30	1.60	1.00	.81
3	.7	1.0	1.1	1.20	2.80	2.00	2.90	2.60	2.25	1.55	1.00	.80
4	.7	1.05	1.6	1.20	3.50	2.60	2.95	2.70	2.30	1.50	1.00	.80
5	.7	1.05	1.45	1.20	2.62	2.40	3.60	2.75	2.30	1.45	.99	.81
6	.7	1.05	1.4	1.20	2.50	2.40	3.45	2.78	2.35	1.48	.98	.86
7	.7	1.05	1.3	1.08	2.40	2.50	3.10	2.70	2.40	1.40	.97	.82
8	.7	1.05	1.2	1.18	2.35	4.90	3.00	2.65	2.40	1.38	.96	.84
9	.7	1.05	1.2	1.21	2.30	4.00	2.95	2.63	2.40	1.36	.95	.88
10	.75	1.05	1.2	2.75	2.20	5.10	2.90	2.60	2.35	1.35	.95	.87
11	.85	1.05	1.2	1.80	2.15	3.90	2.80	2.60	2.30	1.34	.94	.86
12	1.05	1.05	1.2	1.60	2.20	3.40	2.73	2.60	2.28	1.33	.93	.85
13	1.05	1.05	1.2	1.52	2.18	3.20	2.68	2.60	2.27	1.32	.93	.84
14	1.1	1.05	1.25	1.45	2.90	3.00	2.60	2.60	2.26	1.31	.93	.83
15	1.1	1.05	1.25	1.45	2.40	2.85	2.57	2.60	2.25	1.30	.93	.82
16	1.2	1.05	1.2	1.45	2.20	2.80	2.60	2.58	2.24	1.30	.92	.80
17	1.15	1.1	1.2	1.42	2.15	2.80	2.55	2.58	2.23	1.30	.92	.80
18	1.1	1.1	1.2	1.40	2.10	2.81	2.60	2.57	2.20	1.30	.92	.80
19	1.1	1.1	1.2	1.38	2.05	2.80	2.60	2.56	2.10	1.29	.91	.81
20	1.05	1.1	1.4	1.38	2.00	2.80	2.65	2.55	2.05	1.28	.90	.82
21	1.0	1.1	1.3	2.80	2.00	3.05	2.65	2.55	2.00	1.27	.90	.83
22	1.0	1.1	1.3	2.10	2.00	2.81	2.65	2.56	1.95	1.25	.90	.84
23	1.0	1.1	1.3	1.90	2.00	2.75	2.70	2.57	1.90	1.23	.90	.85
24	1.0	1.1	1.3	3.02	1.99	2.80	2.75	2.53	1.88	1.21	.90	.86
25	1.0	1.1	1.3	3.65	1.98	2.85	2.80	2.59	1.84	1.20	.90	.87
26	1.0	1.15	1.25	2.75	1.96	2.75	2.85	2.60	1.80	1.18	.90	.88
27	.95	1.15	1.25	2.25	1.95	2.74	2.90	2.60	1.78	1.15	.89	.88
28	.95	1.15	1.25	2.10	1.90	2.76	2.75	2.50	1.75	1.12	.88	.89
29	.95	1.15	1.2	4.90	.....	2.80	2.60	2.40	1.70	1.10	.87	.90
30	.95	1.1	1.2	3.92	.....	2.88	2.60	2.40	1.68	1.08	.86	.91
31	.95	.....	1.2	6.60	.....	2.90	.....	2.40	.....	1.04	.85	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June.
1911–12.									
1	0.91	1.00	1.15	1.38	1.50	1.20	1.70	2.0	2.35
2	.93	1.00	1.15	1.35	1.45	1.20	1.70	2.0	2.3
3	.95	1.00	1.15	1.30	1.40	1.20	1.70	2.0	2.3
4	.96	1.00	1.15	1.30	1.40	1.25	1.70	2.0	2.25
5	.97	1.00	1.15	1.30	1.39	1.40	1.90	2.0	2.2
6	.99	1.00	1.20	1.30	1.38	1.50	1.85	2.0	2.2
7	1.00	1.00	1.30	1.30	1.37	1.55	1.90	2.05	2.2
8	1.00	1.00	1.30	1.30	1.36	1.50	1.95	2.1	2.15
9	1.00	1.00	1.30	1.35	1.35	1.45	2.0	2.2	2.1
10	1.00	1.80	1.29	1.35	1.34	1.60	2.1	2.25	2.05
11	1.00	1.60	1.28	1.40	1.35	1.60	2.35	2.2	2.0
12	.99	1.50	1.27	1.45	1.35	1.55	2.45	2.25	1.90
13	.98	1.40	1.26	1.45	1.35	1.90	2.4	2.25	1.85
14	.98	1.30	1.24	1.40	1.35	1.80	2.3	2.3	1.80
15	.98	1.20	1.22	1.35	1.35	1.70	2.25	2.35	1.68
16	.98	1.20	1.22	1.35	.....	1.70	2.2	2.4	1.55
17	.98	1.20	1.22	1.35	1.35	1.68	2.15	2.45	1.50
18	.98	1.20	1.22	1.35	1.35	1.65	2.1	2.5	1.45
19	.98	1.20	1.22	1.35	1.35	1.68	2.1	2.5	1.42
20	.98	1.20	1.22	1.35	1.35	1.65	2.05	2.45	1.40
21	.98	1.20	1.22	1.35	1.35	1.60	2.0	2.4	1.35
22	.98	1.20	1.22	1.35	1.35	1.60	2.0	2.35	1.32
23	.98	1.20	1.22	1.35	1.35	1.60	2.0	2.3	1.30
24	.98	1.15	1.22	1.35	1.35	1.60	2.0	2.25	1.28
25	.98	1.15	1.22	1.35	1.32	1.64	2.0	2.2	1.25
26	.98	1.15	1.22	1.50	1.30	1.65	2.05	2.15	1.20
27	.98	1.15	1.25	1.75	1.28	1.70	2.1	2.1	1.17
28	.98	1.15	1.40	1.70	1.25	1.75	2.1	2.1	1.14
29	.98	1.15	1.38	1.65	1.20	1.80	2.05	2.15	1.10
30	.98	1.15	1.38	1.60	.....	1.75	2.0	2.2	1.08
31	.98	.....	1.38	1.55	.....	1.75	.....	2.3	.....

Rating tables for Tule River near Portersville, Cal.

May 1, 1901, to Dec. 31, 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
0.7	9	1.7	93	2.7	298	3.7	685
.8	11	1.8	109	2.8	324	3.8	770
.9	14	1.9	126	2.9	351	3.9	875
1.0	18	2.0	144	3.0	379	4.0	980
1.1	23	2.1	163	3.1	408	4.1	1,085
1.2	30	2.2	183	3.2	440	4.2	1,195
1.3	39	2.3	204	3.3	475	4.3	1,305
1.4	51	2.4	226	3.4	515	4.4	1,415
1.5	64	2.5	249	3.5	560	4.5	1,525
1.6	78	2.6	273	3.6	615		

Jan. 1 to Dec. 31, 1903.

0.8	11	1.8	98	2.8	315	4.6	1,180
.9	14	1.9	115	2.9	345	4.8	1,300
1.0	18	2.0	132	3.0	380	5.0	1,420
1.1	23	2.1	150	3.2	450	5.5	1,770
1.2	30	2.2	170	3.4	530	6.0	2,170
1.3	39	2.3	190	3.6	625	6.5	2,620
1.4	48	2.4	210	3.8	725	7.0	3,120
1.5	58	2.5	235	4.0	830	7.5	3,670
1.6	70	2.6	260	4.2	940		
1.7	83	2.7	285	4.4	1,060		

Jan. 1 to Dec. 31, 1904.

0.80	7	1.00	15	1.20	28	1.40	47
.90	10	1.10	21	1.30	37		

NOTE.—Above gage height, 1.40 feet, the table for 1904 is the same as that for 1903.

Jan. 1 to Dec. 31, 1905.

0.90	7	1.80	82	2.70	270	3.60	581
1.00	12	1.90	98	2.80	297	3.70	626
1.10	18	2.00	115	2.90	325	3.80	672
1.20	24	2.10	133	3.00	355	3.90	720
1.30	31	2.20	152	3.10	386	4.00	770
1.40	38	2.30	173	3.20	419	4.10	822
1.50	46	2.40	195	3.30	455		
1.60	56	2.50	219	3.40	494		
1.70	68	2.60	244	3.50	537		

NOTE.—The above table is based on seven discharge measurements made during 1905. It is well defined between gage heights 0.9 foot and 3 feet.

Jan. 1 to Dec. 31, 1906.

1.30	37	2.50	235	3.70	680	5.80	2,140
1.40	47	2.60	260	3.80	730	6.00	2,300
1.50	58	2.70	285	3.90	780	6.20	2,460
1.60	70	2.80	315	4.00	840	6.40	2,640
1.70	83	2.90	345	4.20	960	6.60	2,820
1.80	98	3.00	380	4.40	1,090	6.80	3,000
1.90	115	3.10	420	4.60	1,230	7.00	3,180
2.00	132	3.20	460	4.80	1,370	8.00	4,080
2.10	150	3.30	500	5.00	1,510	9.00	4,980
2.20	170	3.40	540	5.20	1,660		
2.30	190	3.50	580	5.40	1,820		
2.40	210	3.60	630	5.60	1,980		

NOTE.—This table is based on discharge measurements made during 1904–1906, and is well defined between gage heights 2.2 feet and 6.7 feet.

Jan. 1, 1907, to Dec. 31, 1908.

0.70	6	1.00	21	1.30	45	1.60	76
.80	10	1.10	28	1.40	55	1.70	87
.90	15	1.20	36	1.50	65	1.80	100

NOTE.—This table is not applicable for obstructed-channel conditions. It is based on discharge measurements made during 1906 to 1908 and is well defined. Above gage height 1.8 feet it is the same as the 1906 table.

Daily discharge, in second-feet, of Tule River near Portersville, Cal., for 1909–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	53	410	480	610	950	920	314	75	39
2	70	376	480	706	980	865	300	75	43
3	64	588	810	732	1,010	865	300	70	43
4	75	523	657	757	1,040	865	300	70	43
5	119	657	610	657	1,040	865	273	70	43
6	88	730	657	610	980	810	260	64	43
7	248	2,780	610	610	920	757	236	64	43
8	260	1,450	565	610	865	732	214	58	39
9	248	920	523	634	838	706	204	58	43
10	236	757	483	657	810	680	193	53	43
11	154	1,700	445	634	784	657	183	53	43
12	119	2,180	428	610	757	610	173	53	43
13	3,180	1,590	410	657	657	588	173	53	43
14	4,440	1,040	428	706	634	565	164	53	39
15	1,340	920	445	810	610	565	154	53	39
16	732	865	483	920	610	544	145	53	35
17	544	865	483	1,040	610	523	136	53	35
18	445	810	483	1,010	610	503	136	53	35
19	376	706	445	980	610	464	119	48	35
20	344	657	410	865	610	445	119	48	35
21	5,070	865	565	784	610	445	111	48	35
22	3,090	657	503	732	610	445	111	48	35
23	1,340	565	445	682	565	445	103	48	35
24	840	544	445	588	523	445	103	48	35
25	784	523	445	657	565	428	103	43	35
26	706	483	523	810	588	428	96	43	35
27	706	464	565	920	657	393	88	43	35
28	588	464	565	920	634	360	88	43	35
29	544	.....	810	920	610	329	75	43	39
30	483	.....	657	950	657	329	75	43	39
31	445	.....	565	.....	757	.....	75	39	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
1	39	43	103	1,940	260	173	214	214	88	30	9	6
2	43	43	410	1,170	214	193	214	193	88	30	9	7.5
3	58	43	193	483	193	193	214	193	82	30	9	7.5
4	58	43	128	410	193	183	225	193	82	26	9	7.5
5	53	48	128	360	193	173	214	173	75	26	9	7.5
6	48	48	1,240	314	193	225	214	173	75	26	7.5	7.5
7	48	48	657	286	193	225	214	173	70	23	7.5	9
8	43	48	5,430	273	183	225	214	173	70	23	7.5	9
9	43	128	3,540	260	183	236	214	183	64	23	7.5	9
10	43	119	1,520	236	183	225	214	183	64	14	7.5	9
11	43	103	565	214	173	214	260	183	58	20	6	9
12	43	88	376	204	173	204	260	183	53	17	6	9
13	43	82	314	193	173	204	236	183	48	14	6	12
14	43	75	286	193	173	344	236	183	53	14	6	14
15	43	70	260	260	173	236	236	173	53	14	5	14
16	43	82	236	410	173	214	236	154	53	14	5	20
17	43	75	225	314	173	214	236	154	48	14	5	17
18	43	82	214	260	173	214	236	154	48	20	5	17
19	43	88	214	214	173	214	236	145	48	26	6	14
20	43	88	225	193	173	225	236	136	43	20	6	14
21	43	88	214	193	173	225	260	136	43	17	6	14
22	43	88	225	214	164	225	248	136	38	14	6	12
23	43	88	193	214	164	225	236	136	34	14	6	9
24	43	96	183	260	164	225	225	128	34	14	6	9
25	43	103	173	248	164	214	225	128	34	14	6	9
26	43	260	173	236	154	214	225	119	34	12	6	9
27	43	154	164	225	164	214	225	111	34	12	6	9
28	43	128	164	214	173	214	225	103	30	12	6	9
29	43	103	154	214	.....	214	214	96	30	9	6	9
30	43	103	154	214	.....	214	214	88	30	9	6	9
31	43	.....	410	214	.....	214	.....	88	.....	9	6	.....

Daily discharge, in second-feet, of Tule River near Portersville, Cal., for 1909–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	9	23	34	43	1,520	128	376	286	236	96	26	16
2	9	26	34	43	445	133	393	273	214	88	26	15
3	9	26	34	43	344	154	376	286	204	82	26	14
4	9	30	88	43	610	286	393	314	214	75	26	14
5	9	30	70	43	292	236	657	329	214	70	25	15
6	9	30	64	43	260	236	588	338	225	73	25	15
7	9	30	53	32	236	260	445	314	236	64	24	16
8	9	30	43	41	225	1,440	410	300	236	62	24	18
9	9	30	43	44	214	865	393	294	236	60	23	19
10	12	30	43	329	193	1,590	376	286	225	58	23	18
11	17	30	43	119	183	810	344	286	214	57	22	18
12	30	30	43	88	193	565	323	286	210	56	22	17
13	30	30	43	78	189	483	308	286	208	55	22	16
14	34	30	48	70	376	410	286	286	206	54	22	16
15	34	30	48	70	236	360	278	286	204	53	22	15
16	43	30	43	70	193	344	286	281	201	53	21	14
17	38	34	43	66	183	344	273	281	199	53	21	14
18	34	34	43	64	173	347	286	278	193	53	21	14
19	34	34	43	62	164	344	286	276	173	52	21	15
20	30	34	64	62	154	344	300	273	164	51	20	15
21	26	34	53	344	154	428	300	273	154	50	20	16
22	26	34	53	173	154	347	300	276	145	48	20	16
23	26	34	53	136	154	329	314	278	136	46	20	17
24	26	34	53	417	152	344	329	281	133	44	20	18
25	26	34	53	682	150	360	344	283	126	43	20	18
26	26	38	48	329	147	329	360	286	119	41	20	19
27	23	38	48	204	145	326	376	286	116	38	19	19
28	23	38	48	173	136	332	329	260	111	36	19	19
29	23	38	43	1,440	.....	344	286	236	103	34	18	20
30	23	34	43	821	.....	370	286	236	100	32	18	21
31	23	.....	43	2,780	.....	376	.....	236	.....	29	17	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	21	26	38	62	75	43	103	154	225
2	22	26	38	58	70	43	103	154	214
3	23	26	38	53	64	43	103	154	214
4	24	26	38	53	64	48	103	154	204
5	24	26	38	53	63	64	136	154	193
6	25	26	43	53	62	75	128	154	193
7	26	26	53	53	61	82	136	164	193
8	26	26	53	53	60	75	145	173	183
9	26	26	53	58	58	70	154	193	174
10	26	119	52	58	57	88	173	204	164
11	26	88	51	64	58	88	225	193	154
12	25	75	50	70	58	82	248	204	136
13	25	64	49	70	58	136	236	204	128
14	25	53	47	64	58	119	214	214	119
15	25	43	45	58	58	103	204	225	100
16	25	43	45	58	58	103	193	236	82
17	25	43	45	58	58	100	183	248	75
18	25	43	45	58	58	96	173	260	70
19	25	43	45	58	58	100	173	260	66
20	25	43	45	58	58	96	164	248	64
21	25	43	45	58	58	88	154	236	58
22	25	43	45	58	58	88	154	225	55
23	25	43	45	58	58	88	154	214	53
24	25	38	45	58	58	88	154	204	51
25	25	38	45	58	55	94	154	193	48
26	25	38	45	75	53	96	164	183	43
27	25	38	48	111	51	103	173	173	40
28	25	38	64	103	48	111	173	173	38
29	25	38	62	96	43	119	164	183	34
30	25	38	62	88	.....	111	154	193	32
31	25	.....	62	82	.....	111	.....	214	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: Jan. 1 to Dec. 31, 1909, well defined below 3,200 second-feet; Jan. 1, 1910, to Dec. 31, 1911, well defined; Jan. 1 to June 30, 1912, well defined.

Monthly discharge of Tule River near Portersville, Cal., for 1901–1912.

[Drainage area, 266 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1901.							
May	875	298	418	1.57	1.81	25,702	
June	408	126	240	.902	1.01	14,281	
July	126	30	61	.229	.26	3,751	
August	30	18	19	.071	.08	1,168	
September	23	10	17	.064	.07	1,012	
The period						45,900	
1901–2.							
October	109	18	29	.109	.13	1,783	
November	71	35	43	.162	.18	2,559	
December	64	39	50	.188	.22	3,074	
January	51	34	45	.169	.19	2,767	
February	1,415	45	159	.596	.62	8,830	
March	2,735	144	362	1.36	1.57	22,259	
April	4,615	249	571	2.15	2.40	33,977	
May	408	273	343	1.29	1.49	21,090	
June	324	78	190	.714	.80	11,306	
July	78	26	43	.162	.19	2,644	
August	23	18	21	.079	.09	1,291	
September	17	14	15	.056	.06	893	
The year	4,615	14	156	.586	7.94	112,000	
1902–3.							
October	93	14	24	0.090	0.10	1,476	
November	144	27	50	.188	.21	2,975	
December	204	45	62	.233	.27	3,812	
January	3,790	45	254	.955	1.10	15,618	
February	380	132	173	.651	.68	9,608	
March	675	150	258	.970	1.12	15,864	
April	1,240	285	447	1.68	1.87	26,598	
May	530	170	358	1.35	1.56	22,013	
June	235	70	158	.594	.66	9,402	
July	70	24	38	.143	.16	2,337	
August	23	13	17	.064	.07	1,045	
September	16	13	14	.053	.06	833	
The year	3,790	13	154	.579	7.86	112,000	
1903–4.							
October	19	16	17	.064	.07	1,045	
November	30	18	24	.090	.10	1,428	
December	30	23	28	.105	.12	1,722	
January	47	28	30	.113	.13	1,845	
February	885	28	121	.455	.49	6,960	
March	2,305	70	283	1.06	1.22	17,401	
April	432	210	279	1.05	1.17	16,602	
May	345	150	262	.985	1.14	16,110	
June	150	28	74	.278	.31	4,403	
July	28	8	17	.064	.07	1,045	
August	12	7	9	.034	.04	553	
September	150	7	20	.075	.08	1,190	
The year	2,305	7	97	.365	4.94	70,300	
1904–5.							
October	190	28	55	0.207	0.24	3,382	
November	37	28	30	.113	.13	1,785	
December	83	28	37	.139	.16	2,275	
January	68	38	47.4	.178	.21	2,914	
February	173	42	75.9	.285	.30	4,215	
March	822	68	230	.865	1.00	14,140	
April	270	173	205	.771	.86	12,200	
May	455	219	313	1.18	1.36	19,250	
June	232	75	146	.549	.61	8,688	
July	68	15	32.9	.124	.14	2,023	
August	15	7	9.8	.037	.04	603	
September	12	7	8.2	.031	.03	488	
The year	822	7	99.2	.373	5.08	71,000	

Monthly discharge of Tule River near Portersville, Cal., for 1901–1912—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905–6.							
October	18	8	12.6	0.047	0.05	775	
November	133	15	42.4	.159	.18	2,523	
December	133	82	94.2	.354	.41	5,792	
January	3,500	98	500	1.88	2.17	30,700	
February	420	132	200	.752	.78	11,100	
March	4,530	210	1,370	5.15	5.94	84,200	
April	1,370	540	772	2.90	3.34	45,900	
May	2,780	630	1,080	4.06	4.68	66,400	
June	1,230	680	972	3.66	4.08	57,800	
July	730	150	362	1.36	1.57	22,300	
August	141	58	84.3	.317	.37	5,180	
September	58	37	47.4	.178	.20	2,820	
The year	4,530	8	461	1.73	24.67	335,000	
1906–7.							
October	42	37	38.5	0.145	0.17	2,370	
November	52	47	48.8	.184	.21	2,900	
December	260	52	97.1	.365	.42	5,970	
January	540	115	232	.872	1.00	14,300	A.
February	755	170	285	1.07	1.11	15,800	A.
March	1,370	210	354	1.33	1.53	21,800	A.
April	2,300	380	764	2.87	3.20	45,500	A.
May	460	285	338	1.27	1.46	20,800	A.
June	380	150	262	.985	1.10	15,600	A.
July	160	45	82.3	.309	.36	5,060	A.
August	45	32	36.7	.138	.16	2,260	A.
September	36	28	29.9	.112	.12	1,780	A.
The year	2,300	28	214	.805	10.84	154,000	
1907–8.							
October	76	32	46.0	.173	.20	2,830	A.
November	70	50	53.0	.199	.22	3,150	A.
December	345	55	106	.398	.46	6,520	A.
January	285	76	116	.436	.50	7,130	A.
February	1,230	100	264	.992	1.07	15,200	A.
March	580	170	296	1.11	1.28	18,200	A.
April	260	150	178	.669	.75	10,600	A.
May	210	132	164	.617	.71	10,100	A.
June	132	36	79.8	.300	.34	4,750	A.
July	36	12	20.0	.075	.09	1,230	A.
August	15	6	10.3	.039	.04	633	A.
September	55	6	18.5	.070	.08	1,100	A.
The year	1,230	6	113	.423	5.74	81,400	
1908–9.							
October	76	21	31.3	.118	.14	1,920	A.
November	76	28	34.1	.128	.14	2,030	A.
December	55	45	45.8	.172	.20	2,720	A.
January	5,070	53	895	3.36	3.87	55,000	B.
February	2,780	376	896	3.37	3.51	49,800	A.
March	810	410	530	1.99	2.29	32,600	A.
April	1,040	588	759	2.85	3.18	45,200	A.
May	1,040	523	732	2.75	3.17	45,000	A.
June	920	329	584	2.20	2.46	34,800	A.
July	314	75	165	.620	.71	10,100	A.
August	75	39	53.7	.202	.23	3,300	A.
September	43	35	38.7	.145	.16	2,300	A.
The year	5,070	21	397	1.50	20.06	285,000	
1909–10.							
October	58	39	44.5	.167	.19	2,740	A.
November	260	43	88.5	.333	.37	5,270	A.
December	5,430	103	596	2.24	2.58	36,600	A.
January	1,940	193	343	1.29	1.49	21,100	A.
February	260	154	180	.667	.70	10,000	A.
March	344	173	217	.816	.94	13,300	A.
April	260	214	229	.861	.96	13,600	A.
May	214	88	154	.579	.67	9,470	A.
June	88	30	53.5	.201	.22	3,180	A.
July	30	9	18.1	.068	.08	1,110	A.
August	9	5	6.6	.025	.03	406	A.
September	20	6	10.6	.040	.04	631	A.
The year	5,430	5	162	.608	8.27	117,000	

Monthly discharge of Tule River near Portersville, Cal., for 1901–1912—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1910–11.							
October	43	9	22.2	0.084	0.10	1,360	A.
November	38	23	31.9	.120	.13	1,900	A.
December	88	34	48.5	.182	.21	2,980	A.
January	2,780	32	289	1.09	1.26	17,800	A.
February	1,520	136	271	1.02	1.06	15,100	A.
March	1,590	128	438	1.65	1.90	26,900	A.
April	657	273	353	1.33	1.48	21,000	A.
May	338	236	283	1.06	1.22	17,400	A.
June	236	100	182	.684	.76	10,800	A.
July	96	29	55	.207	.24	3,380	A.
August	26	17	21.7	.082	.09	1,330	B.
September	21	14	16.6	.062	.07	988	B.
The year	2,780	9	168	.631	8.52	121,000	
1911–12.							
October	26	21	24.8	.093	.11	1,520	B.
November	119	26	42.9	.161	.18	2,550	A.
December	64	38	47.7	.179	.21	2,930	A.
January	111	53	65	.244	.28	4,000	A.
February	75	43	58.5	.220	.24	3,370	A.
March	136	43	88.7	.333	.38	5,450	A.
April	248	103	163	.613	.68	9,700	A.
May	260	154	198	.744	.86	12,200	A.
June	225	32	113	.425	.47	6,720	A.
The period						48,400	

NOTE.—In 1907 the drainage area of Tule River near Portersville was revised from 437 to 266 square miles. Therefore the values published in this report will not agree with values published prior to the 1907 progress report.

BEAR CREEK NEAR SPRINGVILLE, CAL.

This station, which is located at the Bear Creek ranger station just above the mouth of Rancheria Creek, $2\frac{3}{4}$ miles above junction with North Fork of Tule River and about 6 miles northeast of Springville, was established January 23, 1911.

A small irrigation ditch takes out about 300 feet above the station.

The gage is a vertical staff fastened to a sycamore tree on the right bank about 150 feet above the junction with Rancheria Creek.

The bed of the stream is composed of sand, gravel, and bowlders and is fairly permanent.

Discharge measurements are made by wading below the gage.

Record of gage heights and discharge measurements is furnished by the United States Forest Service.

Discharge measurements of Bear Creek near Springville, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911		*Feet.*	*Sec.-ft.*
Jan. 25	H. J. Tompkins	2.25	42
Mar. 14	.....do	1.80	22
1912			
May 28	.....do	.88	4

Daily gage height, in feet, of Bear Creek near Springville, Cal., for 1911–12.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.									
1		2.70		1.47	1.30				
2								0.50	
3			1.30			0.99			0.46
4		1.46		1.49			0.60		
5									
6					1.30				
7									
8			3.00						
9			3.36						
10			2.76						
11									
12			2.00						
13					1.26				
14		2.36	1.85			.91			
15									.50
16									
17					1.16				
18									
19									
20						.70			
21			1.46					.50	.50
22									
23	0.95			1.32			.61		
24	2.40					.62			
25	2.15								
26	1.63			1.33					
27	1.30								
28	1.49								
29	2.65								
30	2.22			1.30		.61			.60
31	4.20		1.47		.98		.51	.45	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1			0.65		1.00	0.85			
2					.99				
3		0.62					1.19	1.15	
4	0.60		.68	0.74	.99	.91			
5				.76			1.22		
6		.62	.99	.78		1.25		1.30	
7	.58								
8				.80					
9								1.20	
10	.58	2.10		.85					
11		.91		.89	.93		1.26		
12				.90		1.20			0.68
13					.89			1.30	
14	.56						1.21		
15									
16		.85							
17	.55					1.20			
18			.86	.74					
19							1.15	1.10	
20									
21									
22		.69							
23				.74		1.21	1.30		.62
24	.57				.90				
25									
26	.59			1.50				1.01	
27		.65		1.10					
28	.60							.88	
29					.85	1.19	1.15		
30	.61	.65							.58
31				1.00					

SOUTH FORK OF TULE RIVER NEAR SUCCESS, CAL.

This station, which is located at the Indian school on the Tule Indian reservation, about 8 miles above junction with Tule River and 7 miles southeast of Success, was established October 10, 1910.

Rocky Creek enters about 2 miles above and the South Fork joins the main river about 10 miles below the gage. Thirteen small ditches, with an aggregate capacity of about 11 second-feet, divert water from the South Fork and tributaries above the station for irrigation on the reservation. The South Tule ditch heads about 4 miles below the station.

The gage is a vertical staff fastened to an alder on the left bank directly opposite the Indian school.

Discharge measurements are made by wading at medium and low stages. A car and cable for high-stage measurements have not yet been installed.

The channel, which is composed of bowlders, is rough and probably permanent. The current is swift at medium and high stages. Both banks are high and wooded and not liable to overflow.

This station is maintained in cooperation with the United States Office of Indian Affairs.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of South Fork of Tule River near Success, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-feet.*
Oct. 11	Stewart and Tompkins	0.33	29
1911.			
Jan. 20	H. J. Tompkins	.60	13
May 9	....do	1.20	64
Nov. 28	....do	.55	77
1912.			
Apr. 23	J. E. Stewart	1.20	51
May 28	H. J. Tompkins	1.20	47
28	....do	1.20	48

Daily gage height, in feet, of South Fork of Tule River near Success, Cal., for 1910–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1		0.50	0.71	0.55	1.8	1.0	1.25	1.45	1.0	0.6	0.25	0.15
2		.49	.71	.55	1.6	1.0	1.35	1.4	.9	.6	.25	.15
3		.50	.71	.55	1.4	1.1	1.45	1.3	.9	.55	.25	.15
4		.62	.85	.55	1.6	1.5	1.2	1.2	.9	.55	.25	.15
5		.64	.80	.55	1.35	1.3	2.1	1.25	.9	.5	.25	.15
6		.59	.68	.6	1.3	1.2	2.0	1.35	.95	.5	.25	.15
7		.60	.57	.6	1.2	1.2	1.8	1.35	.9	.5	.25	.15
8		.58	.51	.55	1.1	2.9	1.7	1.25	.9	.5	.25	.15
9		.55	.50	.55	1.0	2.6	1.65	1.2	.9	.5	.2	.15
10	0.21	.51	.48	1.5	1.0	3.1	1.6	1.2	.85	.5	.2	.15
11	.33	.50	.50	.95	1.1	2.5	1.5	1.0	.9	.5	.2	.15
12	.26	.59	.50	.9	1.05	2.1	1.5	1.1	1.0	.5	.2	.15
13	.24	.64	.52	.75	1.1	1.9	1.55	1.2	1.0	.5	.25	.15
14	.24	.62	.54	.7	1.7	1.8	1.5	1.25	1.0	.45	.2	.15
15	.23	.61	.54	.7	1.4	1.8	1.5	1.2	.95	.45	.2	.15

Daily gage height, in feet, of South Fork of Tule River near Success, Cal., for 1910–1912— Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11												
16	0.60	0.60	0.55	0.7	1.15	1.8	1.4	1.3	0.9	0.45	0.2	0.15
17	.56	.60	.56	.65	1.1	1.5	1.3	1.25	.8	.4	.2	.1
18	.52	.60	.55	.7	1.2	1.5	1.2	1.15	.8	.4	.2	.1
19	.48	.62	.54	.65	1.2	1.5	1.2	1.0	.8	.4	.2	.1
20	.43	.66	.92	.65	1.1	1.5	1.4	1.0	.8	.4	.2	.1
21	.42	.66	.94	1.3	1.0	1.6	1.2	1.15	.8	.4	.2	.1
22	.42	.64	.92	1.05	1.0	1.6	.....	1.2	.8	.4	.2	.1
23	.42	.63	.80	.85	1.0	1.5	.....	1.15	.8	.4	.2	.1
24	.43	.63	.71	2.5	1.0	1.5	.....	1.0	.8	.4	.2	.1
25	.44	.68	.65	1.8	1.0	1.5	.....	1.0	.8	.4	.2	.1
26	.43	.70	.64	1.1	.95	1.5	.....	1.0	.8	.4	.2	.1
27	.43	.72	.64	.9	1.0	1.6	1.5	1.0	.75	.3	.2	.12
28	.42	.72	.63	1.1	1.0	1.45	1.5	1.0	.75	.3	.2	.4
29	.42	.70	.60	2.2	.....	1.3	1.45	1.0	.75	.3	.15	.4
30	.42	.70	.57	1.6	.....	1.1	1.4	1.0	.75	.3	.15	.4
31	.43	.....	.56	3.0	.....	1.0	.....	1.0	.....	.25	.15	.....

Day.	Oct.	Nov.	Dec.	Mar.	Apr.	May.	June.
1911–12.							
1	0.4	0.4	0.5	.....	1.0	1.4	1.3
2	.4	.4	.5	.....	1.0	1.4	1.2
3	.38	.4	.5	.....	.9	1.2	1.2
4	.35	.4	.5	.....	.9	1.0	1.2
5	.4	.45	.5	.....	.9	1.0	1.2
6	.4	.45	.55	.....	.9	1.0	1.1
7	.4	.4	.6	.....	.9	1.0	1.1
8	.4	.4	.6	.....	.9	1.0	1.0
9	.5	.4	.6	.....	1.2	1.0	1.0
10	.48	.45	.6	.....	1.4	1.0	1.0
11	.45	.55	.6	.....	1.6	1.0	1.0
12	.45	.55	.6	0.8	1.6	1.4	1.0
13	.45	.55	.6	.8	1.6	1.4	1.0
14	.45	.55	.6	.9	1.6	1.5	1.0
15	.45	.5	.6	1.1	1.6	1.5	1.0
16	.45	.5	.6	1.0	1.5	1.4	1.0
17	.45	.5	.65	.95	1.5	1.4	1.0
18	.45	.5	.62	.8	1.5	1.4	1.0
19	.45	.5	.6	.9	1.5	1.6	.9
20	.45	.45	.65	1.0	1.5	1.6	.8
21	.45	.45	.65	1.0	1.5	1.6	.8
22	.4	.45	.65	.9	1.5	1.45	.75
23	.4	.45	.65	.9	1.5	1.45	.75
24	.4	.45	.6	.9	1.5	1.4	.75
25	.4	.45	.55	.9	1.5	1.4	.75
26	.4	.5	.5	1.0	1.7	1.4	.7
27	.4	.5	.5	1.0	1.8	1.3	.7
28	.4	.5	.55	1.0	1.55	1.3	.7
29	.4	.5	.62	1.0	1.45	1.3	.7
30	.4	.5	.6	1.0	1.5	1.3	.7
31	.4	.....	.6	1.0	.....	1.3	.....

NOTE.—April 22–26, 1911, observer away. Reported no change in river until night of April 26, when rain occurred.

KAWEAH RIVER AT WACHUMNA HILL,[1] CAL.

The following information regarding records of discharge of Kaweah River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

[1] Located in sec. 35, T. 17 S., R. 27 E.

Several gaging stations were established on Kaweah River. Reliable records were obtained, however, only at the station near Three Rivers (at Homer's ranch). This point is above Limekiln and Horse creeks, tributaries of importance at some seasons. For a portion of the period 1878 to 1884 the discharge measurements and gage heights near Three Rivers afforded a basis for an estimate of flow for all ordinary stages. For high stages the discharge is determined from estimates of discharge per square mile of near-by drainage areas. The determined values were transferred to Wachumna Hill by adding an approximated discharge to allow for additional drainage area tributary below the point of measurement. The discharge given below is considered a fair approximation of the quantity of water entering the valley by the river and the creeks which enter its system in the plains.

Monthly discharge of Kaweah River at Wachumna Hill, Cal., for 1878–1884.

[Drainage area, 619 square miles.]

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.				
November [a]	155	0.25	0.28	9,223
December [a]	155	.25	.29	9,531
January	248	.40	.46	15,249
February	279	.45	.47	15,495
March	402	.65	.75	24,718
April	867	1.40	1.56	51,590
May	774	1.25	1.44	47,591
June	557	.90	1.00	33,144
July	124	.20	.23	7,624
August	31	.05	.06	1,906
September [a]	31	.05	.06	1,845
October [a]	62	.10	.12	3,812
The year	307	.496	6.72	222,000
1879–80.				
November	124	.20	.22	7,379
December	279	.45	.52	17,155
January	248	.40	.46	15,249
February	310	.50	.54	17,831
March	464	.75	.86	28,530
April	2,352	3.80	4.24	139,954
May	2,786	4.50	5.19	171,304
June	3,900	6.30	7.02	232,066
July [a]	743	1.20	1.38	45,685
August [a]	155	.25	.29	9,531
September [a]	99	.16	.18	5,891
October [a]	50	.08	.09	3,074
The year	959	1.55	20.99	694,000
1880–81.				
November [a]	74	.12	.13	4,403
December [a]	371	.60	.69	22,812
January [a]	526	.85	.98	32,342
February [a]	774	1.25	1.30	42,986
March [a]	619	1.00	1.15	38,061
April [a]	1,393	2.25	2.51	82,889
May [a]	1,238	2.00	2.31	76,122
June [a]	990	1.60	1.79	58,909

[a] Estimated from run-off of neighboring streams and from previous measurements.

Monthly discharge of Kaweah River at Wachumna Hill, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1880–81.				
July	371	0.60	0.69	22,812
August	155	.25	.29	9,531
September	43	.07	.08	2,559
October	74	.12	.14	4,550
The year	552	.892	12.06	398,000
1881–82.				
November	124	.20	.22	7,379
December	279	.45	.52	17,155
January	155	.25	.29	9,531
February	310	.50	.52	17,217
March	464	.75	.86	28,530
April	1,393	2.25	2.51	82,889
May	2,228	3.60	4.15	136,994
June	929	1.50	1.67	55,279
July[a]	743	1.20	1.38	45,685
August[a]	198	.32	.37	12,175
September[a]	93	.15	.17	5,534
October[a]	87	.14	.16	5,349
The year	584	.943	12.82	424,000
1882–83.[a]				
November	124	.20	.22	7,379
December	93	.15	.17	5,718
January	155	.25	.29	9,531
February	124	.20	.21	6,887
March	619	1.00	1.15	38,061
April	805	1.30	1.45	47,901
May	1,021	1.65	1.90	62,779
June	990	1.60	1.79	58,909
July	402	.65	.75	24,718
August	99	.16	.18	6,087
September	74	.12	.13	4,403
October	62	.10	.12	3,812
The year	381	.615	8.36	276,000
1883–84.[a]				
November	74	.12	.13	4,403
December	74	.12	.14	4,550
January	248	.40	.46	15,249
February	2,177	3.52	3.80	125,222
March	2,290	3.70	4.27	140,807
April	1,548	2.50	2.79	92,112
May	2,847	4.60	5.30	175,055
June	4,271	6.90	7.69	254,142
July	3,497	5.65	6.51	215,022
August	990	1.60	1.84	60,873
September	495	.80	.89	29,455
October	248	.40	.46	15,249
The year	1,560	2.52	34.28	1,130,000

[a] Estimated from run-off of neighboring streams and from previous measurements.

KAWEAH RIVER NEAR THREE RIVERS, CAL.

This station, which is located in the SE. ¼ sec. 27, T. 17 N., R. 28 E., about 1¼ miles southwest of Three Rivers post office and about one-fourth mile back of J. O. Carter's ranch house on the wagon road from Lemon Cove to Three Rivers, about three-fourths of a mile below the junction of South Fork, and about 3 miles below the confluence of the North and Middle forks, was established April 29, 1903.

No important tributaries enter below the point of measurement.

Some water is diverted above the station for power, particularly on Middle and East forks, but it is returned to the stream above Three Rivers. A few small ditches divert water for local irrigation and domestic uses in the small valleys above Three Rivers. The acquired water rights on this stream probably exceed low-water flow.

The data at this station are of particular value in connection with the reclamation of Tulare Lake, also in determining future irrigation and power development.

The staff gage, the datum of which has not been changed since the station was established, is in two sections.

Discharge measurements are made from a cable at the gage and by wading.

The conditions for obtaining accurate discharge data are fairly good. The stream is confined to its channel except at very high stages, when the right bank is overflowed somewhat. The bed, though composed of fine gravel and sand, is not subject to much change. The current is somewhat sluggish at very low stages and rather swift at high stages, though not excessively so.

The record may be considered fairly good.

Discharge measurements of Kaweah River near Three Rivers, Cal., in 1903–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1903.		*Feet.*	*Sec.-feet.*
Apr. 29	Stearns and Dean	6.60	1,297
May 4	W. F. Dean	7.20	1,951
11	do	7.80	2,083
28	do	6.80	1,306
June 17	do	6.50	1,055
25	do	6.60	1,186
July 20	A. J. Robertson	5.40	215
Aug. 27	S. G. Bennett	4.53	51
Nov. 22	G. C. Morgan	4.60	85
1904.			
Jan. 18	G. C. Morgan	4.50	90
29	do	4.40	67
Feb. 7	C. E. Bell	4.80	113
21	do	5.00	225
Mar. 11	do	5.90	465
20	do	6.90	1,240
23	do	8.40	4,788
28	do	6.00	695
29	W. B. Newhall	6.75	1,195
Apr. 17	C. E. Bell	6.50	926
June 7	F. R. S. Buttemer	6.90	1,276
14	do	6.65	1,016
21	do	6.05	692
28	do	5.75	493
July 7	do	5.45	377
14	do	5.05	204
15	do	5.05	222
22	do	4.85	145
30	do	4.65	101
Aug. 6	do	4.70	127
14	do	4.55	92
21	do	4.45	77
28	do	4.50	87
Sept. 3	do	4.30	57
11	do	4.28	53
23	do	4.27	47
27	do	5.34	310
Oct. 3	do	5.31	303
9	do	5.81	495
11	do	7.99	2,730
Oct. 18	F. R. S. Buttemer	5.35	292
24	do	5.20	221
Nov. 1	do	4.90	160
10	do	4.70	111
18	do	4.67	100
28	do	4.60	95
Dec. 5	do	4.55	89
12	do	4.53	80
1905.			
Mar. 18	F. R. S. Buttemer	5.94	577
20	do	6.26	815
May 20	R. S. Hawley	7.25	1,746
June 14	do	7.00	1,480
July 25	do	4.83	136
Sept. 17	C. H. Lee	4.25	32
Oct. 24	Hawley and Lee	4.30	49
1906.			
Feb. 16	C. H. Lee	6.00	644
Mar. 29	do	7.35	2,090
May 11	do	8.35	3,780
23	R. S. Hawley	7.80	2,690
28	C. H. Lee	9.20	5,280
31	do	8.00	3,180
June 9	do	8.40	3,640
20	R. S. Hawley	9.10	5,680
20	do	8.95	5,290
21	do	9.25	5,930
29	do	8.25	3,470
July 19	do	7.65	2,480
28	C. H. Lee	7.10	1,700
Sept. 26	R. S. Hawley	4.97	148
Nov. 14	do	4.72	98
1907.			
Apr. 27	W. F. Martin	7.42	2,380
June 5	do	7.55	2,230
Aug. 8	W. A. Lamb	5.53	395
Sept. 26	do	4.60	67
Nov. 9	do	4.77	106

Discharge measurements of Kaweah River near Three Rivers, Cal., in 1903–1912—Contd.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1908.		*Feet.*	*Sec.-ft.*	1910.		*Feet.*	*Sec.-ft.*
Feb. 25	W. F. Martin	5.52	334	July 12	W. V. Hardy	5.10	185
May 7	W. A. Lamb	6.48	978	Aug. 22	J. E. Stewart	4.40	50
June 19	W. F. Martin	5.89	505	Oct. 12	Stewart and Tompkins.	4.80	134
Aug. 27	W. V. Hardy	4.35	49	Nov. 14	H. J. Tompkins	4.60	80
1909.				1911.			
May 14	W. F. Martin	7.18	1,730	Jan. 31	H. J. Tompkins	9.85	5,500
July 10	W. V. Hardy	6.80	1,270	May 20	Wickert and Tompkins.	7.75	2,160
12	do	6.70	1,240	June 20	W. V. Hardy	7.50	2,010
Aug. 27	do	4.95	186	Sept. 12	J. E. Stewart	4.58	83
Oct. 27	do	4.58	82	1912.			
1910.				Apr. 21	J. E. Stewart	5.40	280
Feb. 9	J. E. Stewart	5.70	445	22	do	5.43	288
Apr. 6	do	6.35	920	June 4	do	7.30	1,850
May 12	do	6.92	1,560				
June 1	do	6.71	1,230				

Daily gage height, in feet, of Kaweah River near Three Rivers, Cal., for 1903–1912.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1903.							1903.						
1		7.60	7.55	6.75	4.60	4.30	16		7.65	6.90	5.45	4.35	4.30
2		7.55	7.55	6.65	4.45	4.40	17		7.20	6.90	5.55	4.30	4.20
3		7.50	7.65	6.60	4.40	4.30	18		7.20	6.70	5.45	4.35	4.20
4		7.45	7.85	6.55	4.35	4.40	19		7.05	6.85	5.30	4.30	4.20
5		7.60	8.00	6.45	4.55	4.30	20		7.15	6.90	5.30	4.40	4.20
6		7.55	7.95	6.30	4.45	4.30	21		6.90	6.85	5.25	4.40	4.20
7		7.60	7.80	6.30	4.40	4.30	22		7.10	6.70	5.15	4.35	4.20
8		7.75	7.65	5.95	4.45	4.20	23		6.65	6.85	5.10	4.40	4.20
9		7.70	7.50	5.80	4.50	4.20	24		6.55	6.70	5.00	4.40	4.20
10		7.90	7.55	5.70	4.35	4.20	25		6.45	6.65	5.15	4.30	4.30
11		8.15	7.40	5.55	4.35	4.20	26		6.40	6.85	5.05	4.35	4.30
12		8.20	6.90	5.65	4.30	4.20	27		6.45	6.85	5.00	4.40	4.30
13		8.25	6.95	5.65	4.25	4.20	28		6.65	6.95	4.85	4.30	4.30
14		8.20	7.25	5.55	4.30	4.20	29	6.7	7.15	6.90	4.85	4.35	4.40
15		7.75	7.15	5.40	4.35	4.20	30	6.9	7.60	6.85	4.75	4.30	4.40
							31		7.85		4.70	4.30	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903–4.												
1	4.40	4.30	4.30	4.40	5.15	5.65	6.15	6.25	7.10	5.60	(4.65)	(4.30)
2	4.40	4.30	4.30	4.40	5.20	5.65	6.05	6.25	7.15	(5.60)	(4.65)	(4.30)
3	4.40	4.30	4.30	4.35	5.20	5.55	6.10	6.45	7.35	(5.60)	(4.65)	(4.30)
4	4.30	4.40	4.30	4.30	5.20	5.50	6.05	6.55	7.70	(5.50)	(4.65)	(4.30)
5	4.30	4.40	4.30	4.30	5.30	5.40	6.10	6.85	7.65	(5.50)	(4.65)	(4.30)
6	4.30	4.40	4.30	4.30	5.30	5.40	6.35	7.20	7.35	(5.50)	4.70	(4.30)
7	4.30	4.40	4.40	4.30	5.30	5.40	6.55	7.80	7.15	5.45	(5.00)	(4.30)
8	4.30	4.40	4.40	4.30	5.30	5.40	6.70	7.80	6.95	(5.40)	(5.20)	(4.30)
9	4.30	4.50	4.40	4.30	5.30	5.30	6.80	7.85	6.75	(5.30)	(5.40)	(4.30)
10	4.30	4.50	4.40	4.30	5.30	5.30	6.90	7.85	6.75	(5.30)	(5.20)	(4.30)
11	4.20	4.50	4.40	4.30	5.40	5.40	6.95	8.00	7.30	(5.20)	(4.80)	(4.30)
12	4.20	4.50	4.40	4.40	5.40	5.80	7.00	7.95	7.30	(5.20)	(4.55)	(4.30)
13	4.20	4.50	4.40	4.40	5.40	5.90	7.05	8.05	6.80	(5.10)	(4.55)	(4.30)
14	4.20	4.50	4.30	4.40	5.20	5.80	6.60	8.05	6.55	5.05	4.55	(4.30)
15	4.20	4.50	4.30	4.40	5.40	5.80	6.75	8.05	6.35	5.05	(4.55)	(4.30)
16	4.20	4.50	4.30	4.40	7.80	5.70	6.85	8.05	6.45	(5.00)	(4.55)	(4.30)
17	4.30	4.60	4.30	4.40	7.35	5.65	6.50	8.10	6.50	(5.00)	(4.50)	(4.30)
18	4.30	4.60	4.30	4.50	7.30	5.80	6.50	7.90	6.40	(5.00)	(4.50)	(4.25)
19	4.30	4.60	4.30	4.50	7.20	6.10	7.50	7.65	6.20	(4.90)	(4.50)	(4.25)
20	4.30	4.60	4.30	4.50	7.20	6.20	6.75	7.70	6.10	(4.90)	(4.45)	(4.25)
21	4.30	4.60	4.40	4.50	7.20	6.00	6.35	7.60	6.05	(4.90)	4.45	4.25
22	4.30	4.60	4.40	4.50	6.80	6.00	6.35	7.55	(6.00)	4.85	(4.45)	(4.25)
23	4.20	4.50	4.40	4.50	6.70	8.40	6.15	7.75	(6.00)	(4.80)	(4.45)	(4.25)
24	4.20	4.40	4.40	4.55	6.65	6.10	6.15	7.90	(5.90)	(4.80)	(4.45)	(4.25)
25	4.20	4.40	4.40	4.60	6.40	6.00	6.40	7.90	(5.90)	(4.80)	(4.50)	(6.00)

Daily gage height, in feet, of Kaweah River near Three Rivers, Cal., for 1903–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903–4.												
26	4.20	4.40	4.40	4.60	6.30	6.10	6.45	7.65	(5.80)	(4.70)	(4.50)	(8.00)
27	4.20	4.40	4.40	4.60	5.90	5.90	6.50	7.40	(5.80)	(4.70)	(4.50)	5.35
28	4.20	4.40	4.40	4.70	5.80	6.25	6.40	7.10	5.75	(4.70)	(4.50)	(5.35)
29	4.20	4.40	4.40	4.70	5.70	7.15	6.30	7.15	(5.70)	(4.70)	(4.40)	(5.30)
30	4.20	4.30	4.40	4.70	.....	6.75	6.40	7.05	(5.70)	4.65	(4.40)	(5.30)
31	4.20	.....	4.40	5.05	.....	6.15	.....	7.10	.....	(4.65)	(4.40)	.....
1904–5.												
1	5.30	4.90	4.60	4.9	4.9	5.4	5.8	6.8	7.05	6.05	4.65	4.3
2	5.30	4.90	4.60	4.85	5.95	5.45	5.9	6.7	7.0	6.0	4.65	4.3
3	5.30	4.90	4.60	4.8	5.4	5.5	6.0	6.55	7.0	5.9	4.65	4.2
4	5.30	4.90	4.60	4.75	5.2	5.5	6.1	6.4	7.3	5.9	4.65	4.3
5	5.40	4.80	4.55	4.7	5.65	5.5	6.2	6.3	6.8	5.8	4.6	4.3
6	5.50	4.80	4.50	4.7	5.2	5.4	6.2	6.4	7.45	5.75	4.6	4.3
7	5.60	4.80	4.50	4.7	5.15	5.45	6.3	6.55	7.05	5.75	4.6	4.3
8	5.70	4.80	4.55	4.7	5.15	5.5	6.25	6.6	6.95	5.7	4.55	4.3
9	5.80	4.80	4.50	4.7	5.15	5.5	6.25	6.5	6.8	5.7	4.55	4.3
10	5.80	4.75	4.60	4.7	5.0	5.45	6.2	6.35	7.05	5.65	4.55	4.2
11	8.00	4.70	4.55	4.7	5.1	5.55	6.15	6.3	7.15	5.6	4.55	4.25
12	7.90	4.70	4.55	4.6	5.0	.....	6.0	6.3	7.35	5.5	4.55	4.25
13	7.00	4.70	4.50	4.7	5.1	6.9	6.0	6.35	7.25	5.4	4.55	4.25
14	6.50	4.70	4.50	4.6	5.0	5.9	6.0	6.55	7.15	5.3	4.6	4.25
15	6.00	4.70	4.50	4.6	5.0	5.8	6.1	6.9	7.15	5.25	4.6	4.25
16	5.50	4.70	4.50	4.65	5.45	6.1	6.2	7.3	7.15	5.2	4.6	4.25
17	5.50	4.70	4.55	4.7	5.35	6.0	6.2	7.4	7.1	5.2	4.45	4.2
18	5.35	4.65	4.50	4.65	5.65	5.95	6.35	7.35	7.0	5.1	4.4	4.25
19	5.30	4.65	4.55	4.7	5.3	7.0	6.3	7.4	6.95	5.1	4.4	4.2
20	5.30	4.65	4.50	4.7	5.2	6.2	6.25	7.3	6.9	5.0	4.35	4.25
21	5.30	4.65	4.40	4.95	5.2	6.1	6.15	7.45	6.8	5.0	4.4	4.25
22	5.30	4.60	4.50	4.95	5.15	5.9	6.15	7.4	6.7	5.0	4.4	4.2
23	5.20	4.60	4.50	4.8	5.1	.....	6.15	7.3	6.6	4.95	4.4	4.2
24	5.20	4.60	4.60	4.8	5.15	5.9	6.2	7.4	6.4	4.9	4.4	4.2
25	5.20	4.60	4.85	4.75	5.2	5.9	6.35	7.5	6.30	4.9	4.4	4.2
26	5.20	4.60	4.60	4.7	5.2	6.1	6.3	7.35	6.35	4.85	4.4	4.2
27	5.10	4.60	4.65	4.7	5.1	6.0	6.35	7.1	6.0	4.85	4.4	4.2
28	5.10	4.60	4.55	4.7	5.4	5.85	6.5	6.9	6.2	4.8	4.35	4.2
29	5.00	4.60	4.60	4.7	.....	6.2	6.75	6.75	6.15	4.7	4.3	4.4
30	5.00	4.60	4.60	4.7	.....	5.9	6.85	6.85	6.15	4.7	4.3	4.45
31	4.90	.....	5.30	4.7	.....	5.7	.....	6.95	.....	4.7	4.25	.....
1905–6.												
1	4.3	4.2	4.6	4.55	5.3	5.85	7.8	6.95	8.05	8.8	6.65	5.5
2	4.35	4.2	4.6	4.5	5.3	5.75	7.6	7.05	8.0	9.1	6.8	5.45
3	4.3	4.25	4.55	4.6	5.3	5.85	7.4	7.2	8.15	9.1	.....	5.4
4	4.25	4.25	4.5	4.6	5.3	6.45	7.3	7.45	8.1	9.05	6.4	5.4
5	4.3	4.25	4.6	4.6	5.3	5.95	7.05	7.6	8.25	9.0	6.5	5.35
6	4.2	4.3	4.5	4.6	5.3	5.95	7.1	7.55	8.0	9.0	6.45	5.3
7	4.25	4.3	4.6	4.6	5.3	5.95	6.95	7.8	7.95	8.8	6.45	5.25
8	4.2	4.3	4.55	4.6	5.4	6.0	6.9	8.2	8.3	8.8	6.4	5.3
9	4.3	4.3	4.55	4.6	5.45	6.0	7.0	8.35	8.65	8.6	6.4	5.3
10	4.25	4.3	4.55	4.6	5.4	6.05	7.35	8.35	8.85	8.55	6.3	5.3
11	4.2	4.3	4.5	4.6	5.4	6.05	7.1	8.25	9.1	8.5	6.3	5.25
12	4.2	4.25	4.5	4.7	5.35	9.3	6.95	8.0	9.25	8.5	6.2	5.2
13	4.2	4.25	4.5	8.1	5.3	7.9	7.0	7.75	9.1	8.4	6.15	5.1
14	4.2	4.3	4.55	9.25	5.4	7.05	7.05	7.8	9.1	8.4	6.1	5.15
15	4.2	4.25	4.55	6.55	6.3	10.3	7.05	7.75	9.1	8.35	6.1	5.15
16	4.25	4.3	4.55	5.95	6.0	10.1	7.15	7.9	9.25	8.3	6.1	5.2
17	4.25	4.3	4.5	5.7	5.8	8.75	7.15	8.15	9.1	8.2	6.0	5.1
18	.....	4.4	4.5	6.3	5.7	7.85	7.15	8.3	9.1	7.95	6.0	5.05
19	4.25	4.3	4.55	9.3	5.7	7.35	7.25	8.35	9.45	7.8	6.0	5.0
20	4.25	4.45	4.6	6.7	5.7	7.15	7.45	8.3	9.4	7.7	5.9	5.0
21	4.2	4.5	4.6	6.15	6.25	7.25	7.6	8.2	9.5	7.6	5.8	5.0
22	4.2	4.4	4.5	5.85	5.9	7.15	7.6	8.1	9.35	7.75	5.75	5.0
23	4.2	4.4	4.5	5.7	5.75	7.05	7.8	7.75	9.35	7.85	5.65	4.95
24	4.25	4.4	4.5	5.6	5.7	8.05	7.45	7.6	9.35	7.7	5.6	5.0
25	4.3	4.4	4.6	5.6	5.7	8.7	7.25	8.05	9.15	7.6	5.6	5.0
26	4.25	4.4	4.5	5.5	5.7	8.6	7.15	9.45	8.9	7.6	5.55	4.95
27	4.25	4.55	4.5	5.5	5.7	8.2	7.35	8.5	8.55	7.5	5.5	4.9
28	4.2	4.6	4.6	5.4	6.15	7.95	7.45	9.75	8.4	7.4	5.5	4.9
29	4.2	4.6	4.6	5.4	.....	7.4	7.15	8.45	8.45	7.05	5.5	4.9
30	4.25	4.6	4.6	5.4	.....	7.65	7.0	8.2	8.65	6.9	5.5	4.9
31	4.2	.....	4.65	5.3	.....	8.35	.....	8.1	.....	6.8	5.6	.....

Daily gage height, in feet, of Kaweah River near Three Rivers, Cal., for 1903–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.												
1.	4.9	4.7	4.8	5.3	5.8	5.8	7.65	7.2	7.9	7.2	5.85	4.85
2.	4.9	4.7	4.8	5.25	5.85	5.8	6.9	7.2	8.15	7.15	5.8	4.85
3.	4.9	4.7	4.8	5.3	5.95	5.7	7.3	7.4	8.2	7.2	5.75	4.85
4.	4.9	4.75	5.0	5.3	5.95	5.9	6.95	7.4	8.05	7.2	5.6	4.85
5.	4.9	5.05	4.9	5.5	5.95	6.5	6.85	7.05	7.6	7.1	5.6	4.85
6.	4.85	4.85	4.9	5.4	5.95	6.4	6.8	7.0	7.55	7.0	5.55	4.8
7.	4.8	4.8	4.9	5.35	5.9	6.1	6.85	7.05	7.6	7.0	5.55	4.8
8.	4.8	4.8	4.9	5.6	5.95	6.1	6.9	7.0	7.3	6.8	5.5	4.75
9.	4.8	4.75	5.3	5.5	5.95	6.05	7.1	7.1	7.3	6.75	5.4	4.75
10.	4.75	4.75	5.1	5.55	5.9	6.0	7.3	7.35	7.5	6.65	5.4	4.7
11.	4.75	4.7	5.0	5.4	5.9	6.2	7.4	7.5	7.5	6.65	5.4	4.7
12.	4.75	4.7	5.7	5.35	5.8	6.2	7.5	7.3	7.55	6.65	5.3	4.7
13.	4.75	4.7	5.25	5.5	5.8	6.05	7.7	7.1	7.1	6.6	5.3	4.7
14.	4.7	4.7	5.1	5.4	5.8	6.0	7.7	6.95	6.95	6.5	5.3	4.7
15.	4.7	4.7	5.1	5.7	5.8	5.9	7.4	7.1	6.85	6.5	5.25	4.65
16.	4.7	4.7	5.0	5.5	5.8	5.9	7.3	7.4	6.9	6.4	5.3	4.65
17.	4.7	4.7	5.0	5.5	6.1	6.7	7.3	7.4	6.8	6.35	5.3	4.65
18.	4.7	4.7	5.0	5.4	5.85	6.4	7.4	7.55	6.9	6.35	5.2	4.65
19.	4.7	4.7	4.95	5.35	5.7	6.7	7.5	7.85	7.2	6.35	5.2	4.6
20.	4.7	4.7	4.95	5.35	5.7	7.1	7.65	7.85	7.4	6.2	5.2	4.6
21.	4.7	4.7	4.95	5.4	5.8	7.1	7.6	7.7	7.5	6.1	5.1	4.6
22.	4.7	4.7	5.0	5.45	6.85	6.8	7.5	7.6	7.4	6.1	5.05	4.6
23.	4.7	4.75	5.0	5.5	6.3	6.65	7.55	7.25	7.25	6.1	5.0	4.6
24.	4.7	4.75	5.0	5.5	6.1	7.45	7.5	7.15	7.15	6.15	5.0	4.6
25.	4.7	4.75	5.0	5.6	6.0	8.0	7.5	7.15	7.2	6.15	5.0	4.6
26.	4.7	4.8	6.5	5.55	6.15	7.1	7.7	7.4	7.3	6.1	5.0	4.6
27.	4.7	4.75	5.75	5.5	5.95	6.9	.....	7.2	7.4	6.0	5.0	4.6
28.	4.7	4.75	5.8	7.15	5.9	6.7	7.3	7.4	7.4	6.0	4.95	4.6
29.	4.65	4.8	5.4	6.75	.....	6.3	7.4	7.5	7.35	5.9	4.9	4.6
30.	4.65	4.7	5.3	6.1	.....	6.65	7.3	7.65	7.3	5.8	4.9	4.6
31.	4.7	.....	5.45	5.95	.....	6.75	.....	7.9	.....	5.8	4.9	.....
1907–8.												
1.	4.6	5.0	4.7	5.15	5.15	5.75	5.7	7.1	6.1	5.5	5.3	4.3
2.	4.6	4.95	4.65	5.1	5.1	5.7	5.65	6.85	6.1	5.5	5.3	4.3
3.	4.6	4.9	4.65	5.0	5.55	5.6	5.65	6.8	6.0	5.45	5.2	4.3
4.	4.6	4.85	4.65	5.05	5.9	5.5	5.65	6.5	5.85	5.45	4.95	4.3
5.	4.6	4.8	4.7	5.0	5.4	5.5	5.8	6.35	5.85	5.4	4.9	4.3
6.	4.8	4.8	4.8	5.0	5.35	5.6	5.9	6.4	5.8	5.3	4.8	4.3
7.	4.75	4.8	6.2	5.0	5.3	5.5	5.8	6.5	5.95	5.3	4.8	4.4
8.	4.7	4.8	5.35	5.0	5.25	5.6	5.7	6.65	6.2	5.3	4.7	4.55
9.	4.65	4.75	5.1	5.0	5.45	5.6	5.75	6.2	6.2	5.2	4.7	4.5
10.	4.6	4.75	5.1	5.0	5.45	5.65	5.9	6.0	6.3	5.25	4.65	4.45
11.	4.6	4.75	5.75	5.0	5.35	5.7	6.2	6.0	6.3	5.2	4.6	4.7
12.	4.6	4.75	5.3	5.0	5.4	5.75	6.3	6.15	6.3	5.2	4.6	4.6
13.	4.6	4.75	5.3	5.0	5.2	5.85	6.4	6.05	6.3	5.2	4.6	4.5
14.	4.6	4.7	5.15	5.1	5.3	6.0	6.4	6.0	6.2	5.1	4.5	4.5
15.	4.6	4.7	5.1	5.45	5.35	6.1	6.3	6.0	6.15	5.1	4.5	4.4
16.	4.6	4.7	5.35	5.25	5.35	6.35	6.25	6.0	6.1	5.0	4.5	4.4
17.	4.7	4.7	5.1	5.2	5.4	6.4	6.25	5.95	6.0	4.95	4.5	4.4
18.	4.7	4.8	5.0	5.1	5.25	6.3	6.35	6.1	5.9	4.9	4.5	4.4
19.	4.7	4.8	5.0	5.1	5.3	6.3	6.45	6.25	5.9	4.9	4.4	4.4
20.	4.7	4.8	5.05	5.1	5.25	6.3	6.5	6.1	5.9	4.85	4.4	4.4
21.	4.75	4.8	5.0	5.1	5.35	6.3	6.55	6.25	5.85	4.8	4.4	4.4
22.	4.75	4.75	5.0	5.05	5.9	6.3	6.35	6.2	5.8	4.75	4.4	4.4
23.	4.8	.....	4.95	5.05	5.5	6.3	6.25	6.3	5.75	4.75	4.4	4.4
24.	5.0	.....	4.95	5.55	5.45	6.25	6.2	6.4	5.8	4.8	4.4	5.25
25.	4.95	4.7	4.95	5.65	5.5	6.3	6.2	6.65	5.7	4.8	4.35	5.65
26.	4.9	4.75	4.95	5.45	5.65	6.2	6.45	6.6	5.7	4.8	4.35	5.0
27.	5.35	4.7	5.1	5.3	5.65	6.0	6.55	6.45	5.7	4.8	4.35	5.0
28.	5.3	4.7	5.2	5.25	5.7	5.9	6.85	6.4	5.7	4.8	4.35	4.7
29.	5.1	4.7	5.1	5.25	6.1	5.8	6.9	6.5	5.6	4.8	4.35	4.6
30.	5.0	4.7	5.1	5.2	.....	5.75	6.9	6.6	5.5	4.8	4.35	4.6
31.	5.15	.....	5.2	5.15	.....	5.65	.....	6.2	.....	4.8	4.35	.....
1908–9.												
1.	4.55	4.5	4.65	4.6	5.95	6.2	6.4	7.8	8.7	7.8	5.65	5.05
2.	4.5	4.55	4.7	4.95	5.9	6.25	6.65	8.0	9.05	8.0	5.6	5.0
3.	4.5	4.5	4.8	4.8	6.25	6.75	6.75	8.1	9.25	7.8	5.6	4.9
4.	4.5	4.55	4.75	4.75	6.0	6.65	6.75	8.2	9.35	7.45	5.55	4.9
5.	4.5	4.55	4.9	4.7	6.2	6.6	6.6	8.25	9.2	7.2	5.55	5.0

Daily gage height, in feet, of Kaweah River near Three Rivers, Cal., for 1903–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908–09.												
6	4.5	4.5	4.8	5.2	6.4	6.5	6.5	8.3	8.95	6.95	5.5	5.1
7	4.5	4.5	4.75	5.4	7.9	6.45	6.55	8.35	8.55	6.8	5.55	4.9
8	4.45	4.5	4.75	5.0	7.0	6.4	6.7	8.0	8.5	6.8	5.45	4.9
9	4.45	4.5	4.7	6.0	6.6	6.4	6.7	8.1	8.4	6.8	5.4	4.9
10	4.4	4.5	4.7	6.0	6.5	6.35	6.9	8.1	8.55	6.75	5.4	4.9
11	4.4	4.5	4.7	5.25	8.55	6.25	6.65	7.8	8.5	6.8	5.35	4.85
12	4.4	4.5	4.65	5.5	8.7	6.2	6.55	7.5	8.45	6.9	5.3	4.85
13	4.4	4.5	4.65	9.5	7.9	6.2	6.75	7.35	8.5	6.8	5.3	4.8
14	4.4	4.5	6.65	10.3	7.3	6.2	7.0	7.2	8.4	6.25	5.2	4.7
15	4.6	4.5	4.65	7.55	7.05	6.25	7.25	7.35	8.3	6.6	5.2	4.7
16	5.35	4.5	4.65	6.6	6.95	6.35	7.3	7.4	8.15	6.5	5.2	4.7
17	5.1	4.5	4.6	6.3	6.8	6.2	7.4	7.5	8.0	6.4	5.2	4.6
18	5.55	4.45	4.55	6.1	6.7	6.25	7.35	7.55	7.55	6.35	5.2	4.6
19	5.2	4.45	4.6	5.95	6.7	6.2	7.4	7.65	7.45	6.2	5.2	4.6
20	4.8	4.45	4.6	5.95	6.5	6.2	7.1	7.75	7.5	6.1	5.2	4.6
21	4.75	4.45	4.65	10.6	6.7	6.3	7.1	7.85	7.8	6.1	5.2	4.6
22	4.65	4.5	4.6	8.6	6.5	6.3	6.9	7.65	8.1	6.15	5.2	4.6
23	4.8	4.7	4.6	7.3	6.4	6.2	6.9	7.4	8.2	6.15	5.1	4.6
24	4.8	4.9	4.6	6.8	6.4	6.2	7.05	7.3	8.55	6.1	5.05	4.6
25	4.8	4.8	4.6	6.55	6.3	6.15	7.1	7.45	8.8	6.1	5.0	4.6
26	4.7	4.8	4.6	6.4	6.3	6.35	7.3	7.75	7.75	6.0	5.0	4.6
27	4.7	4.7	4.6	6.6	6.2	6.35	7.5	8.0	7.7	5.9	5.0	4.6
28	4.7	4.7	4.6	6.3	6.2	6.35	7.5	7.8	7.7	5.8	4.9	4.6
29	4.65	4.65	4.6	6.2	.....	6.5	7.35	7.45	7.55	5.7	5.0	4.6
30	4.6	4.65	4.6	6.15	.....	6.4	7.5	7.6	7.55	5.7	5.1	4.6
31	4.6	.....	4.6	6.05	.....	6.35	.....	8.4	.....	5.7	5.1	.....
1909–10.												
1	4.6	4.65	5.4	8.8	6.0	5.85	6.2	6.8	6.7	5.3	4.75	4.4
2	4.65	4.6	6.2	7.05	5.75	5.95	6.25	6.8	6.6	5.2	4.65	4.4
3	5.0	4.6	5.6	6.6	5.8	6.1	6.3	6.8	6.45	5.2	4.6	4.4
4	4.9	4.6	5.3	6.3	5.8	6.1	6.4	6.7	6.35	5.2	4.6	4.4
5	4.9	4.6	5.5	6.2	5.75	6.2	6.5	6.5	6.3	5.1	4.6	4.4
6	4.8	4.6	5.35	6.15	5.75	6.2	6.4	6.6	6.2	5.1	4.55	4.35
7	4.8	4.6	5.4	6.1	5.75	6.2	6.35	6.8	6.1	5.1	4.5	4.35
8	4.8	4.6	6.05	6.0	5.7	6.3	6.4	6.85	6.05	5.1	4.5	4.35
9	4.75	5.3	10.1	5.95	5.7	6.3	6.5	7.05	6.0	5.05	4.5	4.3
10	4.7	5.15	7.2	5.9	5.7	6.25	6.6	6.9	6.0	5.1	4.5	4.3
11	4.7	5.05	6.5	5.85	5.7	6.25	6.55	7.0	6.0	5.0	4.5	4.3
12	4.65	5.05	6.2	5.8	5.7	6.25	6.5	7.0	6.0	5.05	4.5	4.3
13	4.65	5.0	6.05	5.8	5.75	6.25	6.4	7.1	6.15	5.0	4.45	4.3
14	4.6	5.0	5.9	5.8	5.8	6.45	6.5	7.1	5.9	5.0	4.45	4.35
15	4.6	5.0	5.8	5.9	5.8	6.25	6.6	7.1	5.75	5.0	4.45	4.6
16	4.6	5.0	5.7	6.65	5.7	6.1	6.75	7.05	5.7	4.9	4.4	4.6
17	4.6	5.05	5.7	6.2	5.7	6.2	6.9	6.9	5.8	4.9	4.4	4.6
18	4.6	5.1	5.55	6.0	5.7	6.35	7.0	6.8	5.7	5.6	4.4	4.5
19	4.6	5.1	5.55	5.9	5.7	6.45	7.1	6.8	5.7	5.7	4.4	4.45
20	4.6	5.1	5.65	5.9	5.7	6.4	7.1	6.8	5.65	5.3	4.4	4.4
21	4.6	5.75	5.55	5.9	5.65	6.3	7.0	6.7	5.65	5.1	4.4	4.4
22	4.6	5.55	5.5	5.95	5.65	6.35	7.1	6.8	5.6	5.0	4.4	4.4
23	4.6	5.35	5.5	6.1	5.6	6.3	7.1	6.8	5.55	4.95	4.4	4.35
24	4.55	5.3	5.5	6.0	5.6	6.2	7.15	6.8	5.5	4.9	4.4	4.35
25	4.55	5.6	5.4	5.95	5.7	6.2	7.3	6.75	5.55	4.85	4.4	4.25
26	4.55	5.9	5.4	5.9	5.7	6.1	7.1	6.7	5.55	4.9	4.4	4.35
27	4.55	5.5	5.4	5.9	5.75	6.1	7.2	6.8	5.55	4.9	4.4	4.3
28	4.55	5.4	5.4	5.9	5.75	6.05	6.95	6.8	5.5	4.9	4.4	4.3
29	4.6	5.4	5.4	5.9	.....	6.0	7.0	6.8	5.4	4.8	4.4	4.3
30	4.65	5.4	5.4	5.9	.....	6.1	6.9	6.8	5.3	4.75	4.4	4.3
31	4.65	.....	7.2	5.9	.....	6.1	.....	6.8	.....	4.75	4.4	.....
1910–11.												
1	4.3	4.45	4.5	4.53	7.48	5.62	7.02	6.92	.....	6.90	5.55	4.60
2	4.3	4.5	4.5	4.58	6.88	5.62	6.92	6.92	6.85	6.85	5.44	4.60
3	4.3	4.5	4.6	4.56	6.60	5.74	6.92	7.08	7.12	6.90	5.40	4.60
4	4.3	4.5	5.1	4.58	6.85	6.55	6.85	7.30	7.55	6.85	5.36	4.59
5	4.3	4.55	4.8	4.52	6.38	6.15	7.35	7.38	.....	6.88	5.32	4.55
6	4.3	4.55	4.7	4.58	6.22	6.10	7.10	7.20	.....	6.80	5.36	.....
7	4.3	4.5	4.7	4.52	6.10	6.30	6.95	7.28	7.75	6.78	5.28	4.53
8	4.3	4.5	4.65	4.55	6.02	8.75	6.85	7.50	7.90	6.70	5.24	4.52
9	4.3	4.5	4.65	4.58	5.95	7.55	6.82	7.20	7.50	6.60	5.21	4.51
10	4.3	4.5	4.65	6.45	5.94	8.25	6.78	7.30	7.75	6.62	5.20	4.51

Daily gage height, in feet, of Kaweah River near Three Rivers, Cal., for 1903–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
11	4.45	4.5	5.3	5.30	5.95	7.20	6.68	.....	8.15	6.48	5.16	4.51
12	4.8	4.6	5.15	5.08	5.84	6.90	6.55	7.32	8.15	6.50	5.12	4.54
13	4.65	4.6	4.95	5.01	6.18	6.62	6.60	7.30	8.20	6.45	5.08	4.55
14	4.6	4.6	4.8	4.99	6.22	6.57	6.48	7.30	8.15	6.42	5.05	4.53
15	4.7	4.55	4.75	5.24	5.94	6.62	6.54	7.05	7.80	6.62	5.02	4.50
16	4.8	4.55	4.7	5.20	5.85	6.55	6.58	6.90	7.85	6.54	4.98	4.50
17	4.7	4.55	4.65	5.02	5.82	6.52	6.68	6.92	8.00	6.58	4.95	4.50
18	4.8	4.55	4.65	4.98	5.82	6.55	6.78	7.00	7.90	6.60	4.92	4.50
19	4.8	4.6	4.65	4.92	5.82	6.55	6.90	7.30	7.75	6.40	4.89	4.46
20	4.75	4.6	4.7	4.92	5.79	6.52	6.92	7.48	7.60	6.21	4.88	4.44
21	4.7	4.6	4.7	6.28	5.70	6.60	6.92	7.62	7.50	6.10	4.83	4.46
22	4.65	4.55	4.65	5.64	5.70	6.59	7.00	7.85	7.40	6.05	4.78	4.56
23	4.65	4.55	4.7	5.41	5.70	6.48	7.10	8.30	7.28	5.98	4.78	4.68
24	4.6	4.55	4.65	6.55	5.74	6.55	7.15	.....	7.08	5.96	4.74	4.60
25	4.6	4.55	4.65	7.10	5.68	6.55	7.15	7.55	7.02	5.88	4.71	4.50
26	4.55	4.6	4.65	6.29	5.68	6.56	7.20	7.15	7.20	5.78	4.68	4.57
27	4.5	4.6	4.6	5.82	5.60	6.55	7.15	7.15	7.20	5.72	4.65	4.56
28	4.5	4.6	4.6	5.70	5.61	6.62	6.95	7.30	7.15	5.68	4.64	4.54
29	4.5	4.55	4.6	10.00	.....	6.74	6.79	7.25	7.10	5.56	4.64	4.49
30	4.5	4.5	4.6	9.05	.....	6.82	6.82	7.15	6.98	5.60	4.61	4.94
31	4.5	.....	4.6	9.70	.....	6.92	.....	7.00	.....	5.58	4.60	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	4.74	4.50	4.57	4.64	4.80	4.78	5.25	5.95	7.7
2	4.68	4.50	4.57	4.65	4.80	4.77	5.45	5.9	7.6
3	4.74	4.50	4.58	4.65	4.77	4.76	5.5	5.8	7.7
4	4.64	4.50	4.60	4.65	4.80	4.82	5.42	5.8	7.6
5	4.62	4.50	4.60	4.64	4.77	4.93	5.5	5.85	7.4
6	4.61	4.50	4.63	4.64	4.77	5.26	5.45	5.9	7.4
7	4.59	4.50	4.65	4.65	4.77	5.16	5.6	5.95	7.2
8	4.56	4.50	4.64	4.68	4.75	5.08	5.7	6.0	7.0
9	4.58	4.50	4.61	4.67	4.75	4.99	5.8	6.0	6.6
10	4.55	4.61	4.60	4.74	4.76	5.20	5.8	6.05	6.6
11	.....	4.96	4.60	4.88	4.78	5.09	5.9	6.4	6.6
12	.....	4.66	4.60	4.85	4.78	5.14	5.7	6.6	6.6
13	.....	4.62	4.60	4.78	4.78	5.24	5.6	6.5	6.35
14	4.52	4.58	4.60	4.86	4.78	5.12	5.55	6.8	6.45
15	4.53	4.64	4.60	4.88	4.78	5.21	5.65	6.9	6.4
16	4.52	4.71	4.60	4.87	4.77	5.22	5.65	7.1	6.3
17	4.50	4.62	4.69	4.84	4.76	5.18	5.6	7.2	6.3
18	4.50	4.58	4.65	4.72	4.80	5.15	5.65	7.2	6.3
19	4.50	4.60	4.60	4.72	4.80	5.18	5.6	7.0	6.2
20	4.50	4.60	4.60	4.72	4.78	5.20	5.5	6.8	6.2
21	4.50	4.60	4.62	4.72	4.80	5.15	5.4	6.7	6.1
22	4.49	4.60	.....	4.73	4.78	5.10	5.44	6.4	5.85
23	4.49	4.55	4.65	4.71	4.79	5.16	5.6	6.3	5.7
24	4.49	4.55	4.62	.....	4.79	5.24	5.9	6.7	5.6
25	4.49	4.55	4.58	4.71	4.80	5.29	5.6	6.8	5.6
26	4.49	4.55	4.60	4.80	4.78	5.29	5.7	6.5	5.7
27	.....	4.55	4.65	4.95	4.75	5.28	5.7	6.6	5.65
28	.....	4.55	4.72	4.86	4.75	5.22	5.75	7.2	5.65
29	4.50	4.55	4.70	4.88	4.76	5.38	5.85	7.7	5.6
30	4.50	4.56	4.68	4.80	.....	5.35	5.8	7.6	5.5
31	4.50	.....	4.68	4.80	.....	5.22	.....	7.6	.....

NOTE.—Gage heights June 22 to Nov. 19, 1904, are interpolated between discharge measurements.

Rating tables for Kaweah River near Three Rivers, Cal.

Apr. 29 to Dec. 31, 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
4.2	40	5.2	225	6.2	795	7.2	1,750
4.3	45	5.3	265	6.3	875	7.3	1,870
4.4	50	5.4	305	6.4	960	7.4	1,990
4.5	60	5.5	350	6.5	1,050	7.5	2,110
4.6	70	5.6	400	6.6	1,140	7.6	2,230
4.7	85	5.7	460	6.7	1,235	7.7	2,360
4.8	105	5.8	520	6.8	1,330	7.8	2,490
4.9	130	5.9	580	6.9	1,430	7.9	2,620
5.0	160	6.0	650	7.0	1,530	8.0	2,750
5.1	190	6.1	720	7.1	1,640	8.1	2,890

Jan. 1 to Dec. 31, 1904.

4.20	40	5.30	280	6.40	850	7.50	1,950
4.30	53	5.40	315	6.50	920	7.60	2,080
4.40	66	5.50	350	6.60	1,000	7.70	2,220
4.50	80	5.60	390	6.70	1,080	7.80	2,380
4.60	95	5.70	435	6.80	1,170	7.90	2,550
4.70	115	5.80	485	6.90	1,260	8.00	2,730
4.80	135	5.90	540	7.00	1,360	8.10	2,920
4.90	160	6.00	600	7.10	1,470	8.20	3,120
5.00	190	6.10	660	7.20	1,580	8.30	3,370
5.10	220	6.20	720	7.30	1,700	8.40	3,700
5.20	250	6.30	780	7.40	1,820		

Jan. 1 to Dec. 31, 1905.

4.20	40	5.10	210	6.00	625	6.90	1,375
4.30	49	5.20	240	6.10	690	7.00	1,480
4.40	61	5.30	274	6.20	760	7.10	1,590
4.50	75	5.40	312	6.30	835	7.20	1,700
4.60	91	5.50	350	6.40	915	7.30	1,815
4.70	109	5.60	395	6.50	1,000	7.40	1,935
4.80	130	5.70	445	6.60	1,090	7.50	2,060
4.90	154	5.80	500	6.70	1,180		
5.00	180	5.90	560	6.80	1,275		

NOTE.—The above table is based on seven discharge measurements made during 1905. It is well defined throughout.

Jan. 1 to Dec. 31, 1906.

6.30	840	7.00	1,580	7.70	2,560	8.80	4,590
6.40	930	7.10	1,700	7.80	2,720	9.00	5,040
6.50	1,020	7.20	1,830	7.90	2,880	9.20	5,520
6.60	1,120	7.30	1,960	8.00	3,060	9.40	6,000
6.70	1,220	7.40	2,100	8.20	3,420	9.60	6,480
6.80	1,340	7.50	2,240	8.40	3,800	9.80	6,960
6.90	1,460	7.60	2,400	8.60	4,180		

NOTE.—This table is based upon 15 discharge measurements made during 1906 and is well defined below gage height 9.2 feet. Below gage height 6.30 feet this table is the same as the 1905 table.

Jan. 1, 1907, to Dec. 31, 1908.

4.20	35	5.70	446	7.20	1,730	8.70	4,470
4.30	42	5.80	503	7.30	1,870	8.80	4,700
4.40	51	5.90	564	7.40	2,010	8.90	4,930
4.50	62	6.00	628	7.50	2,160	9.00	5,160
4.60	75	6.10	695	7.60	2,320	9.10	5,400
4.70	91	6.20	765	7.70	2,480	9.20	5,640
4.80	110	6.30	839	7.80	2,650	9.30	5,880
4.90	132	6.40	917	7.90	2,830	9.40	6,120
5.00	156	6.50	999	8.00	3,010	9.50	6,370
5.10	184	6.60	1,085	8.10	3,200	9.60	6,620
5.20	216	6.70	1,175	8.20	3,400	9.70	6,870
5.30	254	6.80	1,270	8.30	3,600	9.80	7,130
5.40	296	6.90	1,370	8.40	3,810	9.90	7,390
5.50	342	7.00	1,480	8.50	4,030	10.00	7,650
5.60	392	7.10	1,600	8.60	4,250		

NOTE.—This table is not applicable for obstructed-channel conditions. It is based on discharge measurements made 1903 to 1908 and is well defined.

Daily discharge, in second-feet, of Kaweah River near Three Rivers, Cal., for 1909–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	75	596	765	917	2,650	4,470	2,650	419	181
2	144	564	802	1,130	3,010	5,280	3,010	394	166
3	110	802	1,220	1,220	3,200	5,760	2,650	394	140
4	100	628	1,130	1,220	3,400	6,000	2,080	371	140
5	91	765	1,090	1,090	3,500	5,640	1,730	371	166
6	216	917	999	999	3,600	5,040	1,420	348	196
7	296	2,830	958	1,040	3,700	4,140	1,270	371	140
8	156	1,480	917	1,180	3,010	4,030	1,270	326	140
9	628	1,090	917	1,180	3,200	3,810	1,270	305	140
10	628	999	878	1,370	3,200	4,140	1,220	305	140
11	235	4,140	802	1,130	2,650	4,030	1,270	285	128
12	342	4,470	765	1,040	2,160	3,920	1,370	265	128
13	6,370	2,830	765	1,220	1,940	4,030	1,270	265	117
14	8,430	1,870	765	1,480	1,730	3,810	802	229	97
15	2,240	1,540	802	1,800	1,940	3,600	1,090	229	97
16	1,090	1,420	878	1,870	2,010	3,300	999	229	97
17	839	1,270	765	2,010	2,160	3,010	917	229	80
18	695	1,180	802	1,940	2,240	2,240	878	229	80
19	596	1,180	765	2,010	2,400	2,080	765	229	80
20	596	999	765	1,600	2,560	2,160	695	229	80
21	9,210	1,180	839	1,600	2,740	2,650	695	229	80
22	4,250	999	839	1,370	2,400	3,200	730	229	80
23	1,870	917	765	1,370	2,010	3,400	730	196	80
24	1,270	917	765	1,540	1,870	4,140	695	181	80
25	1,040	839	730	1,600	2,080	3,600	695	166	80
26	917	839	878	1,870	2,560	2,560	628	166	80
27	1,090	765	878	2,160	3,010	2,480	564	166	80
28	839	765	878	2,160	2,650	2,480	503	140	80
29	765	.....	999	1,940	2,080	2,240	446	166	80
30	730	.....	917	2,160	2,320	2,240	446	196	80
31	662	.....	878	.....	3,810	.....	446	196	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
1	80	88	305	4,850	636	538	785	1,360	1,260	271	110	50
2	88	80	765	1,660	478	603	828	1,360	1,160	235	90	50
3	166	80	394	1,160	507	710	870	1,360	1,010	235	80	50
4	140	80	265	870	507	710	960	1,260	915	235	80	50
5	140	80	348	785	478	785	1,060	1,060	870	202	80	50
6	117	80	285	748	478	785	960	1,160	785	202	72	44
7	117	80	305	710	478	785	915	1,360	710	202	63	44
8	117	80	662	636	449	870	960	1,420	673	202	63	44
9	107	265	7,910	603	449	870	1,060	1,660	636	188	63	39
10	97	222	1,730	570	449	828	1,160	1,480	636	202	63	39
11	97	181	999	538	449	828	1,100	1,600	636	173	63	39
12	88	181	765	507	449	828	1,060	1,600	636	188	63	39
13	88	166	662	507	478	828	960	1,720	748	173	56	39
14	80	166	564	507	507	1,010	1,060	1,720	570	173	56	44
15	80	166	503	570	507	828	1,160	1,720	478	173	56	80
16	80	166	446	1,200	449	710	1,310	1,660	449	146	50	80
17	80	181	446	785	449	785	1,480	1,480	507	146	50	80
18	80	196	371	636	449	915	1,600	1,360	449	399	50	63
19	80	196	371	570	449	1,010	1,720	1,360	449	449	50	56
20	80	196	419	570	449	960	1,720	1,360	424	271	50	50
21	80	474	371	570	424	870	1,600	1,260	424	202	50	50
22	80	371	348	603	424	915	1,720	1,360	399	173	50	50
23	80	285	348	710	399	870	1,720	1,360	376	160	50	44
24	72	265	348	636	399	785	1,780	1,360	352	146	50	44
25	72	394	305	603	449	785	1,990	1,310	376	134	50	34
26	72	564	305	570	449	710	1,720	1,260	376	146	50	44
27	72	348	305	570	478	710	1,850	1,360	376	146	50	39
28	72	305	305	570	478	673	1,440	1,360	352	146	50	39
29	80	305	305	570	.....	636	1,600	1,360	310	121	50	39
30	88	305	305	570	.....	710	1,480	1,360	271	110	50	39
31	88	.....	1,730	570	.....	710	.....	1,360	.....	110	50	.....

Daily discharge, in second-feet, of Kaweah River near Three Rivers, Cal., for 1909–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	39	56	63	68	1,920	391	1,390	1,290	1,300	1,270	362	86
2	39	63	63	77	1,250	391	1,290	1,290	1,220	1,220	318	86
3	39	63	80	73	1,000	445	1,290	1,450	1,500	1,270	303	86
4	39	63	202	77	1,220	960	1,220	1,700	2,020	1,220	289	84
5	39	72	121	66	831	678	1,760	1,800	2,110	1,250	275	78
6	39	72	99	77	723	645	1,480	1,580	2,210	1,180	289	76
7	39	63	99	66	645	775	1,320	1,680	2,300	1,160	261	75
8	39	63	90	72	597	4,000	1,220	1,950	2,530	1,080	248	73
9	39	63	90	77	555	2,020	1,190	1,580	1,950	1,000	238	72
10	39	63	90	1,010	549	3,120	1,160	1,700	2,300	1,020	235	72
11	56	63	271	271	555	1,580	1,070	1,710	2,940	905	223	72
12	121	80	218	196	494	1,270	960	1,720	2,940	920	210	76
13	90	80	160	176	697	1,020	1,000	1,700	3,030	882	198	78
14	80	80	121	170	723	976	905	1,700	2,940	860	190	75
15	99	72	110	249	549	1,020	952	1,420	2,370	1,020	182	70
16	121	72	99	235	499	960	984	1,270	2,450	952	171	70
17	99	72	90	179	483	936	1,070	1,290	2,690	984	163	70
18	121	72	90	168	483	960	1,160	1,370	2,530	1,000	155	70
19	121	80	90	151	483	960	1,270	1,700	2,300	845	148	64
20	110	80	99	151	468	936	1,290	1,920	2,080	716	145	62
21	99	80	99	853	426	1,000	1,290	2,110	1,950	645	133	64
22	90	72	90	419	426	992	1,370	2,450	1,820	615	122	80
23	90	72	99	314	426	905	1,480	3,200	1,680	573	122	101
24	80	72	90	1,100	445	960	1,530	2,610	1,450	561	113	86
25	80	72	90	1,720	417	960	1,530	2,020	1,390	515	107	70
26	72	80	90	862	417	968	1,580	1,530	1,580	464	101	81
27	63	80	80	520	382	960	1,530	1,530	1,580	435	96	80
28	63	80	80	449	386	1,020	1,320	1,700	1,530	417	94	76
29	63	72	80	6,610	.....	1,120	1,170	1,640	1,480	366	94	69
30	63	63	80	4,560	.....	1,190	1,190	1,530	1,350	382	88	160
31	63	.....	80	5,920	.....	1,290	.....	1,370	.....	374	86	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	113	70	81	80	109	105	230	545	2,360
2	101	70	81	82	109	103	301	515	2,220
3	113	70	83	82	103	101	320	460	2,360
4	96	70	86	82	109	113	290	460	2,220
5	90	70	86	80	103	138	320	488	1,940
6	88	70	92	80	103	234	301	515	1,940
7	84	70	96	82	103	202	365	545	1,680
8	80	70	94	87	100	178	410	575	1,450
9	83	70	88	85	100	154	460	575	1,040
10	78	88	86	98	101	214	460	608	1,040
11	77	166	86	127	105	181	515	865	1,040
12	76	97	86	120	105	196	410	1,040	1,040
13	74	90	86	105	105	227	365	950	825
14	73	83	86	122	105	190	342	1,240	908
15	75	94	86	127	105	217	388	1,340	865
16	73	107	86	124	103	221	388	1,560	785
17	70	90	103	118	101	208	365	1,680	785
18	70	83	96	94	109	199	388	1,680	785
19	70	86	86	94	109	208	365	1,450	710
20	70	86	86	94	105	214	320	1,240	710
21	70	86	90	94	109	199	282	1,140	640
22	69	86	93	96	105	184	297	865	488
23	69	78	96	92	107	202	365	785	410
24	69	78	90	92	107	227	515	1,140	365
25	69	78	83	92	109	244	365	1,240	365
26	69	78	86	109	105	244	410	950	410
27	69	78	96	144	100	240	410	1,040	388
28	70	78	109	122	100	221	435	1,680	388
29	70	78	105	127	101	275	488	2,360	365
30	70	80	101	109	.....	264	460	2,220	320
31	70	.....	101	109	.....	221	.....	2,220	.....

NOTE.—Daily discharge determined from rating curve applicable as follows: Jan. 1 to Jan. 14, 1909, well defined; Jan. 15 to Dec. 31, 1909, well defined; Jan. 1, 1910, to Jan. 28, 1911, well defined; Jan. 29 to Dec. 31, 1911, well defined; Jan. 1 to June 30, 1912, well defined.

Monthly discharge of Kaweah River near Three Rivers, Cal., for 1903–1912.

[Drainage area, 520 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1903.							
May	3,100	960	2,007	3.86	4.45	123,406	
June	2,750	1,188	1,749	3.36	3.75	104,073	
July	1,283	85	462	.89	1.03	28,407	
August	70	42	50	.10	.11	3,074	
September	50	40	43	.08	.09	2,559	
1903–4.							
October	50	40	43	.08	.09	2,644	
November	70	45	56	.11	.12	3,332	
December	50	45	48	.09	.10	2,951	
January	205	53	78	.15	.17	4,796	
February	2,380	235	729	1.40	1.50	41,933	
March	1,525	280	640	1.23	1.42	39,352	
April	1,415	630	968	1.86	2.08	57,600	
May	2,920	750	2,054	3.95	4.55	126,296	
June	2,220	435	1,052	2.02	2.25	62,598	
July	390	105	220	.42	.48	13,527	
August	315	60	108	.21	.24	6,641	
September	2,730	46	190	.37	.41	11,306	
The year	2,920	40	516	.991	13.41	373,000	
1904–5.							
October	2,730	160	511	.98	1.13	31,420	
November	160	95	117	.22	.25	6,962	
December	280	66	95	.18	.21	5,841	
January	167	91	116	.223	.26	7,133	
February	592	154	258	.496	.52	14,330	
March	1,480	312	553	1.06	1.22	34,000	
April	1,325	500	783	1.51	1.68	46,590	
May	2,060	835	1,386	2.67	3.08	85,220	
June	1,998	625	1,348	2.59	2.89	80,210	
July	658	109	303	.583	.67	18,630	
August	100	44	76.6	.147	.17	4,710	
September	68	40	45.2	.087	.10	2,690	
The year	2,730	40	466	.896	12.18	338.000	
1905–6.							
October	55	40	43.4	.083	.10	2,669	
November	91	40	56.6	.109	.12	3,368	
December	100	75	83.0	.160	.18	5,103	
January	5,760	75	784	1.51	1.74	48,200	
February	840	274	418	.804	.84	23,200	
March	8,160	472	2,440	4.69	5.41	150.000	
April	2,720	1,460	1,910	3.67	4.10	114,000	
May	6,840	1,520	3,210	6.17	7.11	197,000	
June	6,240	2,970	4,670	8.98	10.02	278.000	
July	5,280	1,340	3,430	6.60	7.61	211,000	
August	1,340	350	691	1.33	1.53	42,500	
September	350	154	226	.435	.49	13,400	
The year	8,160	40	1,497	2.88	39.25	1,090,000	
1906–7.							
October	154	100	120	.231	.27	7,380	
November	195	109	119	.229	.26	7,080	
December	1,020	109	245	.471	.54	15,100	
January	1,660	235	412	.792	.91	25,300	B.
February	1,320	446	600	1.15	1.20	33,300	B.
March	3,010	446	1,030	1.98	2.28	63,300	A.
April	2,480	1,270	1,960	3.77	4.21	117,000	A.
May	2,830	1,420	1,950	3.75	4.32	120,000	A.
June	3,400	1,270	2,030	3.90	4.35	121,000	A.
July	1,730	503	1,020	1.96	2.26	62,700	A.
August	533	132	261	.502	.58	16,000	B.
September	121	75	90.4	.174	.19	5,380	B.
The year	3,400	75	820	1.58	21.37	594,000	

Monthly discharge of Kaweah River near Three Rivers, Cal., for 1903–1912—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1907–8.							
October	275	75	112	0.215	0.25	6,890	B.
November	156	91	105	.202	.23	6,250	B.
December	765	83	197	.379	.44	12,100	B.
January	419	156	206	.396	.46	12,700	B.
February	695	184	326	.627	.68	18,800	B.
March	917	342	598	1.15	1.33	36,800	B.
April	1,370	419	793	1.52	1.70	47,200	B.
May	1,600	596	886	1.70	1.96	54,500	B.
June	839	342	604	1.16	1.29	35,900	B.
July	342	100	185	.356	.41	11,400	B.
August	254	46	85.4	.164	.19	5,250	B.
September	419	42	81.5	.157	.18	4,850	B.
The year	1,600	42	348	.670	9.12	253,000	
1908–9.							
October	367	51	98.5	.189	.22	6,060	B.
November	132	56	71.6	.138	.15	4,260	B.
December	132	68	85.2	.164	.19	5,240	B.
January	9,210	75	1,500	2.89	3.33	92,200	B.
February	4,470	564	1,390	2.67	2.78	77,200	A.
March	1,220	730	868	1.67	1.92	53,400	A.
April		917	1,510	2.90	3.25	89,800	A.
May	3,810	1,730	2,640	5.08	5.86	162,000	A.
June	6,000	2,080	3,650	7.02	7.83	217,000	A.
July	3,010	446	1,140	2.19	2.52	70,100	A.
August	419	140	260	.500	.58	16,000	B.
September	196	80	111	.213	.24	6,600	B.
The year	9,210	51	1,110	2.13	28.87	800,000	
1909–10.							
October	166	72	92.2	.177	.20	5,670	B.
November	564	80	218	.419	.47	13,000	B.
December	7,910	265	758	1.46	1.68	46,600	A.
January	4,850	507	823	1.58	1.82	50,600	B.
February	636	399	466	.896	.93	25,900	A.
March	1,010	538	792	1.52	1.75	48,700	A.
April	1,990	785	321	.617	.69	19,100	A.
May	1,720	1,060	1,410	2.71	3.12	86,700	A.
June	1,260	271	587	1.13	1.26	34,900	A.
July	449	110	195	.375	.42	12,000	A.
August	110	50	59.9	.115	.13	3,680	B.
September	80	34	48.4	.093	.10	2,880	B.
The year	7,910	34	481	.925	12.57	350,000	
1910–11.							
October	121	39	72.1	.139	.16	4,430	B.
November	80	56	71.2	.137	.15	4,240	B.
December	271	63	107	.206	.24	6,580	A.
January	6,610	66	869	1.67	1.92	53,400	B.
February	1,920	382	645	1.24	1.29	35,800	B.
March	4,000	391	1,140	2.19	2.52	70,100	B.
April	1,760	905	1,270	2.44	2.72	75,600	B.
May	3,200	1,270	1,730	3.33	3.84	106,000	B.
June	3,030	1,220	2,050	3.94	4.40	122,000	B.
July	1,270	366	842	1.62	1.87	51,800	B.
August	362	86	186	.358	.41	11,400	B.
September	160	62	78.7	.151	.17	4,680	B.
The year	6,610	39	755	1.45	19.69	546,000	
1911–12.							
October	113	69	78	.150	.17	4,800	B.
November	166	70	83.3	.160	.18	4,960	B.
December	109	81	90.6	.174	.20	5,570	B.
January	144	80	102	.196	.23	6,270	B.
February	109	100	105	.202	.22	6,040	B.
March	275	101	198	.381	.44	12,200	A.
April	515	230	378	.727	.81	22,500	A.
May	2,360	460	1,100	2.12	2.44	67,600	B.
June	2,360	320	1,030	1.98	2.21	61,300	B.
The period						191,000	

NORTH FORK OF KAWEAH RIVER AT KAWEAH, CAL.

This station, which is located at the highway bridge half a mile above Kaweah and about 2 miles above the junction with Kaweah River, was established October 12, 1910.

Sheep Creek enters 2½ miles above and Manikin Creek one-fourth mile below the gage. Several small ditches divert water for irrigation above the station. The total amount of water used is estimated at about 20 second-feet.

The slightly inclined staff gage is fastened to the right abutment of the bridge from which discharge measurements are made.

Both banks are high and wooded and not subject to overflow. The bed of the stream is composed of rock and sand. At low water the current is sluggish at the bridge.

This station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of North Fork of Kaweah River at Kaweah, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-ft.*	1911.		*Feet.*	*Sec.-ft.*
Oct. 13	Stewart and Tompkins	0.80	17	Feb. 1	H. J. Thomkins	3.00	729
Nov. 11	H. J. Tompkins	.66	12	Mar. 10	Tompkins and Purdy	3.65	1,120
12	do	.73	13	11	H. J. Tompkins	2.95	675
				12	do	2.68	499
1911.				May 19	do	2.45	344
Jan. 27	H. J. Tompkins	1.82	151	Sept. 17	do	.60	7
29	do	5.00	2,000				
29	do	5.20	[a] 2,060	1912.			
29	do	5.55	[a] 2,540	Apr. 22	J. E. Stewart	1.50	86
30	do	4.20	1,510	June 5	do	1.68	122

[a] Measurement very unreliable.

NOTE.—All measurements above 600 second-feet liable to error.

Daily gage height, in feet, of North Fork of Kaweah River at Kaweah, Cal., for 1910–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1		0.65			3.0		2.7	2.4	2.2	1.5	0.9	0.6
2		.62		0.74			2.6	2.45	2.1	1.55	.9	.6
3		.63	0.78	.75		1.75	2.7	2.45	2.1	1.45	.85	.6
4		.66	1.20	.78				2.55	2.1	1.5	.85	.6
5		.69	.90			2.8	2.9	2.7	2.3	1.4	.85	.6
6		.65		.79			2.85	2.55	2.2		.85	.6
7		.65		.78		2.35	2.7	2.55	2.2		.85	.6
8		.66	.82			4.1	2.6		2.2		.85	.6
9		.65	.80	.83		3.1	2.55	2.55		1.3	.85	.6
10		.66	.80	1.92		3.65	2.5	2.5		1.3	.85	.6
11		.65	1.52	1.30		3.0	2.4	2.5		1.25	.85	.6
12	0.93	.74		1.22		2.7	2.4	2.5	2.1	1.25	.8	.6
13	.80	.81	1.05	1.15		2.5	2.35	2.5	2.1	1.2	.8	.6
14		.75	.95	1.12	2.00	2.45	2.35	2.4		1.2	.8	.6
15				1.55			2.3	2.3		1.15	.75	.6
16			.90	1.35			2.35			1.1	.75	.6
17			.83			2.5	2.45		2.0	1.1	.75	.6
18					1.80	2.45	2.5		1.95	1.1	.7	.6
19					1.80	2.35	2.55	2.45		1.2	.7	.6
20	.75				1.80	2.4	2.5	2.4	1.9	1.15	.7	.6

Daily gage height, in feet, of North Fork of Kaweah River at Kaweah, Cal., for 1910–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
21	0.70	0.72	.....	.....	.....	2.45	2.5	2.5	.....	1.1	0.7	0.6
22	.65	.....	.....	.....	.....	2.35	.....	2.5	.....	1.1	.7	.6
23	.63	.....	.....	.....	.....	2.4	2.55	2.5	.....	1.1	.7	.7
24	.64	.....	.....	2.59	1.72	2.4	2.75	2.5	.....	1.1	.7	.7
25	.65	.71	.....	2.85	.....	2.45	2.7	.....	.....	1.05	.7	.7
26	.62	.82	0.83	2.28	.....	2.35	2.7	.....	1.7	1.05	.7	.7
27	.61	.78	.82	1.78	1.60	2.45	2.7	2.2	1.68	1.0	.7	.7
28	.61	.74	.....	1.72	.....	2.5	2.5	2.2	1.58	1.0	.65	.7
29	.61	.....	.....	4.85	.....	2.48	2.4	2.2	1.6	1.0	.65	.7
30	.61	.73	.....	4.29	.....	2.6	2.4	2.0	1.55	.95	.65	.7
31	.63	.....	.....	4.88	.....	2.6	.....	.....	.....	.9	.65	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	0.7	0.7	0.8	0.90	1.00	0.95	1.35	1.70	1.80
2	.....	.7	.8	.90	1.00	.95	1.40	1.70	1.75
3	.....	.7	.8	.85	1.00	.95	1.40	1.75	1.75
4	.....	.7	.8	.85	.95	1.10	1.45	1.75	1.80
5	.....	.7	.8	.90	.95	1.10	1.80	1.80	1.80
6	.....	.7	.8	.90	.90	1.30	1.70	1.80	1.75
7	.....	.7	.8	.90	.90	1.30	1.60	1.80	1.70
8	.....	.7	.85	.90	.90	1.30	1.50	1.80	1.65
9	.....	.7	.9	.90	.90	1.30	1.80	1.90	1.50
10	.....	.95	.85	1.10	.95	1.30	1.75	1.85	1.45
11	.....	1.12	.85	1.20	.95	1.20	1.90	1.80	1.40
12	.....	.9	.8	1.10	.95	1.25	1.65	1.80	1.40
13	.....	.85	.85	1.00	.95	1.30	1.60	1.85	1.35
14	.....	.85	.85	1.00	.95	1.30	1.60	1.90	1.35
15	.7	.85	.9	1.00	.90	1.30	1.60	1.90	1.30
16	.7	.85	.9	1.00	.90	1.40	1.60	1.85	1.30
17	.7	.85	.9	1.00	.85	1.25	1.60	1.90	1.30
18	.7	.8	.9	.95	.85	1.30	1.60	1.90	1.25
19	.7	.8	.9	.90	.85	1.30	1.65	1.90	1.20
20	.7	.8	.9	.90	.85	1.20	1.50	1.90	1.20
21	.65	.8	.9	.90	.90	1.25	1.55	1.85	1.15
22	.65	.8	.9	.90	.90	1.30	1.55	1.85	1.10
23	.65	.75	.9	.90	.90	1.30	1.60	1.85	1.10
24	.65	.75	.85	.90	.90	1.35	1.70	1.85	1.05
25	.65	.8	.85	.90	.95	1.40	1.70	1.80	1.05
26	.65	.8	.85	.95	.95	1.40	1.70	1.80	1.00
27	.65	.8	.85	1.00	.95	1.40	1.65	1.85	1.00
28	.65	.8	.95	1.10	.95	1.35	1.65	1.85	.95
29	.65	.8	.95	1.10	.95	1.35	1.70	1.80	.95
30	.7	.8	.9	1.05	.....	1.35	1.70	1.80	.95
31	.7	.....	.9	1.05	.....	1.30	.....	1.80	.....

SOUTH FORK OF KAWEAH RIVER NEAR THREE RIVERS, CAL.

This station, which is located on Mehrten ranch in the SE. ¼ sec. 8, T. 18 S., R. 29 E., 500 feet above the mouth of Cinnamon Creek and 4½ miles southeast of Three Rivers, was established September 18, 1911.

Two small ditches divert water for irrigation above the station.

The gage is a vertical staff fastened to a large bowlder on the right bank.

The bed of the stream is composed of gravel and bowlders and is rough.

Until November, 1911, when the car and cable were installed, discharge measurements were made by wading above the gage.

Discharge measurements of South Fork of Kaweah River near Three Rivers, Cal., in 1911–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-feet.*
Sept. 19	H. J. Tompkins	2.00	4.6
Nov. 23	do	2.10	12.0
1912.			
Mar. 13	do	2.45	33
Apr. 21	J. E. Stewart	2.60	41
June 4	do	3.85	288

Daily gage height, in feet, of South Fork of Kaweah River near Three Rivers, Cal., for 1911–12.

Day.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.										
1		2.1	2.0	2.1	2.1	2.2	2.2	2.51	2.90	4.05
2		2.1	2.0	2.1	2.1	2.2	2.2	2.43	2.89	4.05
3		2.1	2.0	2.1	2.1	2.2	2.2	2.45	2.90	4.0
4		2.1	2.1	2.15	2.1	2.2	2.25	2.45	2.92	4.0
5		2.1	2.1	2.2	2.1	2.2	2.2	2.75	2.97	3.9
6		2.1	2.1	2.15	2.1	2.2	2.4	2.55	2.99	3.8
7		2.05	2.05	2.15	2.1	2.2	2.3	2.50	2.99	3.7
8		2.05	2.1	2.1	2.1	2.2	2.25	2.47	3.00	3.6
9		2.15	2.2	2.1	2.1	2.2	2.2	2.80	3.04	3.55
10		2.1	2.4	2.1	2.1	2.2	2.25	2.80	3.41	3.55
11		2.1	2.2	2.1	2.25	2.2	2.25	2.90	3.42	3.5
12		2.05	2.15	2.1	2.15	2.2	2.25	2.80	3.43	3.5
13		2.05	2.1	2.2	2.1	2.2	2.45	2.75	3.45	3.35
14		2.0	2.1	2.2	2.1	2.2	2.40	2.70	3.5	3.37
15		2.0	2.1	2.2	2.1	2.2	2.30	2.70	3.6	3.32
16		2.0	2.15	2.2	2.1	2.2	2.55	2.70	3.7	3.15
17		2.0	2.1	2.3	2.1	2.25	2.40	2.65	3.8	3.10
18		2.0	2.1	2.1	2.1	2.25	2.35	2.65	3.85	3.00
19	1.95	2.0	2.1	2.15	2.1	2.25	2.20	2.65	3.7	2.93
20	2.0	2.0	2.1	2.15	2.1	2.25	2.20	2.65	3.7	2.89
21	2.1	2.0	2.1	2.15	2.1	2.25	2.20	2.65	3.55	2.88
22	2.0	2.0	2.1	2.15	2.1	2.25	2.15	2.63	3.35	2.87
23	2.0	2.0	2.1	2.25	2.1	2.2	2.15	2.80	3.33	2.86
24	2.0	2.0	2.1	2.2	2.1	2.15	2.15	2.95	3.55	2.84
25	2.0	2.0	2.1	2.1	2.1	2.15	2.15	2.80	3.75	2.82
26	2.0	2.0	2.1	2.1	2.15	2.15	2.50	2.77	3.40	2.80
27	2.0	2.05	2.1	2.1	2.35	2.15	2.50	2.80	3.6	2.78
28	2.0	2.05	2.1	2.25	2.2	2.15	2.45	2.85	3.9	2.55
29	2.1	2.05	2.1	2.15	2.15	2.15	2.51	2.86	4.1	2.50
30	2.2	2.1	2.1	2.1	2.15	.....	2.45	2.87	4.2	2.48
31	.....	2.1	.....	2.1	2.15	.....	2.43	.....	4.0	.....

Daily discharge, in second-feet, of South Fork of Kaweah River near Three Rivers, Cal., for 1911–12.

Day.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.										
1		10	5	10	10	15	15	37	80	359
2		10	5	10	10	15	15	30	79	359
3		10	5	10	10	15	15	32	80	340
4		10	10	12	10	15	18	32	83	340
5		10	10	15	10	15	15	61	90	305
6		10	10	12	10	15	28	40	93	273
7		8	8	12	10	15	21	36	93	243
8		8	10	10	10	15	18	34	94	216
9		12	15	10	10	15	15	67	100	204
10		10	28	10	10	15	18	67	170	204

Daily discharge, in second-feet, of South Fork of Kaweah River near Three Rivers, Cal., for 1911–12—Continued.

Day.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.										
11	.....	10	15	10	18	15	18	80	173	191
12	.....	8	12	10	12	15	18	67	175	191
13	.....	8	10	15	10	15	32	61	180	158
14	.....	5	10	15	10	15	28	55	191	162
15	.....	5	10	15	10	15	21	55	216	151
16	.....	5	12	15	10	15	40	55	243	119
17	.....	5	10	21	10	18	28	50	273	110
18	.....	5	10	10	10	18	24	50	289	94
19	4	5	10	12	10	18	15	50	243	84
20	5	5	10	12	10	18	15	50	243	79
21	10	5	10	12	10	18	15	50	204	77
22	5	5	10	12	10	18	12	48	158	76
23	5	5	10	18	10	15	12	67	153	75
24	5	5	10	15	10	12	12	87	204	72
25	5	5	10	10	10	12	12	67	258	70
26	5	5	10	10	12	12	36	63	168	67
27	5	8	10	10	24	12	36	67	216	65
28	5	8	10	18	15	12	32	74	305	40
29	10	8	10	12	12	12	37	75	378	36
30	15	10	10	10	12	.....	32	76	420	34
31	.....	10	.....	10	12	.....	30	.....	340	.....

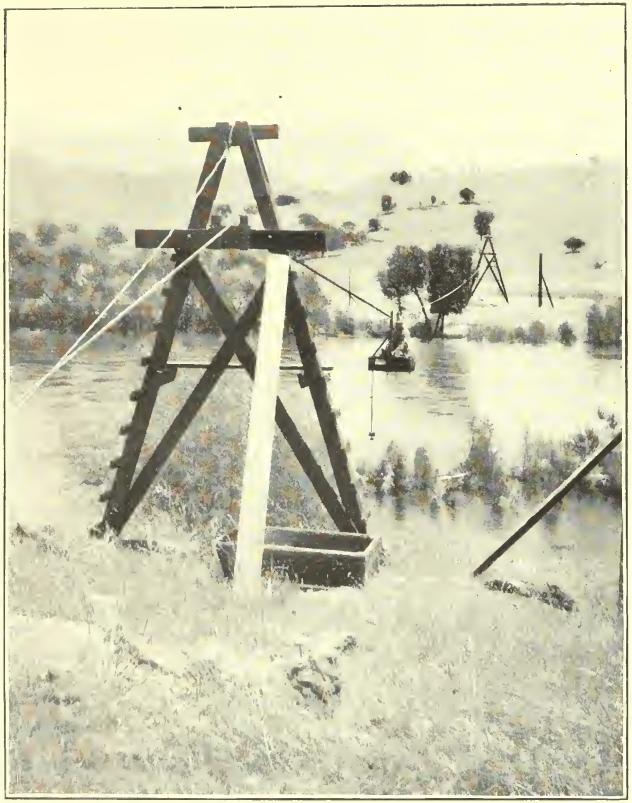
NOTE.—Daily discharge determined from a fairly well-defined rating curve.

Monthly discharge of South Fork of Kaweah River near Three Rivers, Cal., for 1911–12.

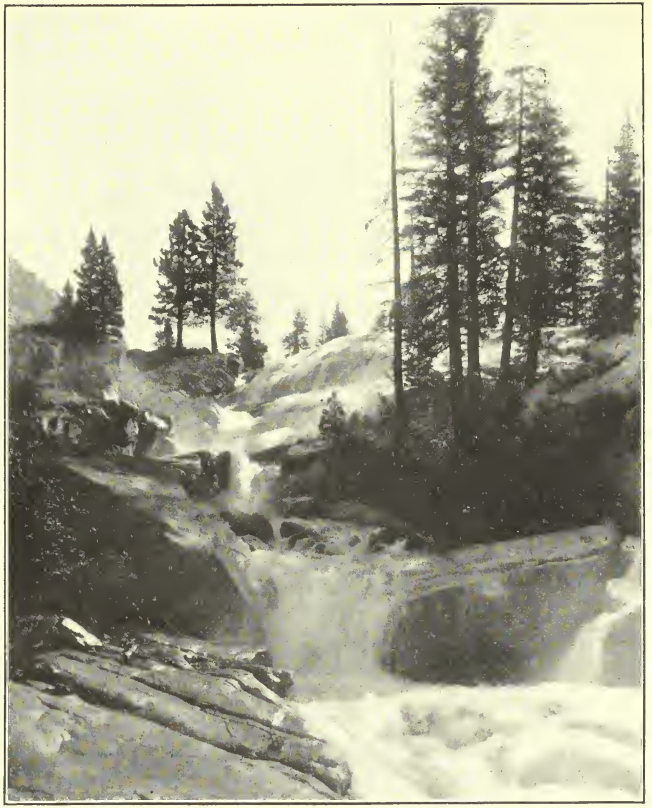
Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1911–12.					
September 19–30	15	4	6.58	157	C.
October	12	5	7.52	462	C.
November	28	5	10.5	625	B.
December	21	10	12.4	762	B.
January	24	10	11.2	689	B.
February	18	12	15.0	863	B.
March	40	12	22.0	1,350	B.
April	76	30	56.1	3,340	B.
May	420	79	193	11,900	B.
June	359	34	160	9,520	B.
The period	.....	.....	.....	29,500	

KINGS RIVER AT SUSPENSION BRIDGE, CAL.

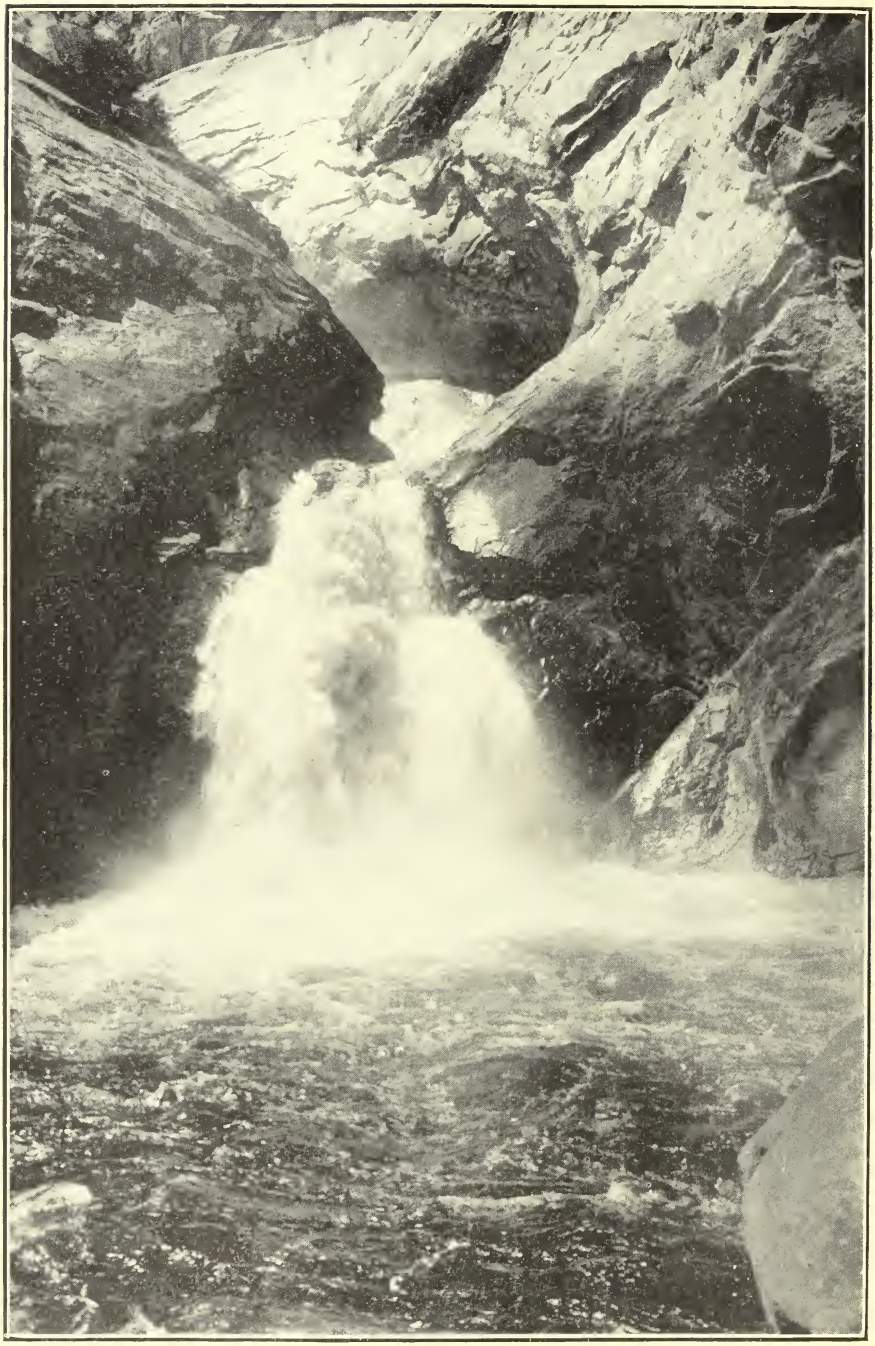
An effort was made in 1895 to establish a station on Kings River higher up in the foothills than previous stations, most of the other bridges in the valley being like the one at Kingsburg. (See p. 178.) Two trips were made during 1895 to Suspension Bridge, about 30 miles above Sanger, where the flume of the Sanger Lumber Co. crosses the river. At this point the conditions were hardly better than at Kingsburg, for although the river was comparatively confined and no canals were taken out above it, in times of high water the velocities were so high that it was difficult to handle the meter in the water, and the channel was badly broken with large bowlders. The bed of the stream was



A. CABLE STATION ON KINGS RIVER NEAR RED MOUNTAIN, CAL.



B. FALLS ON BUBBS CREEK, TRIBUTARY TO KINGS RIVER.



FALLS ON ROARING RIVER, TRIBUTARY TO SOUTH FORK OF KINGS RIVER.

found to be shifting very rapidly also. The station was abandoned on September 30, 1895, in favor of the cable station near Red Mountain, 10 miles northeast of Sanger (Pl. V, *A*).

Discharge measurements of Kings River at Suspension Bridge, Cal., in 1895–1897.

Date.	Hydrographer.	Gage height.	Discharge.
1895.		*Feet.*	*Sec.-feet.*
June 25	J. B. Lippincott	13.9	10,307
Sept. 2	A. P. Davis	9.5	525
1897.			
Dec. 23	J. B. Lippincott	4.9	522

Daily gage height, in feet, of Kings River at Suspension Bridge, Cal., for 1895.

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1		12.8	10.5	9.4	16		11.4	10.0	10.1
2		12.8	10.3	9.4	17		11.0	10.0	10.0
3		12.6	10.5	9.4	18		11.0	10.0	10.0
4				9.4	19		11.0	10.0	9.8
5		12.2	10.5	9.3	20		11.0	10.0	9.7
6		11.6	10.6	9.3	21		10.8	9.9	9.6
7		12.1	10.6	9.3	22		10.8	9.9	
8		12.2	10.3		23		10.8	9.9	9.5
9		12.3	10.1	9.2	24		10.8	9.8	9.4
10		12.2	10.1	9.2	25	13.2	11.0		9.4
11		11.8		9.3	26	13.9		9.6	9.3
12		11.7	10.0	9.4	27	13.9	10.8	9.6	9.3
13		11.6	10.0	13.4	28	12.9	10.7	9.5	9.3
14		11.5	10.0	12.7	29	13.0	10.6	9.5	
15		11.5	10.0	11.7	30		10.5	9.5	9.2
					31		10.5	9.4	

KINGS RIVER NEAR SANGER, CAL.

This station, which is located in the NW. ¼ sec. 8, T. 13 S., R. 24 E., about half a mile below the new highway bridge at Piedra, about 10 miles northeast of Sanger and southwest of Red Mountain, was established September 3, 1895.

No tributaries enter below the station. Mill Creek enters from the south about 3 miles above the point of measurement. Big and Dinkey creeks enter from the north about 10 and 15 miles, respectively, above the station. The forks unite 20 or 25 miles above.

No water is diverted immediately above the place of measurement. Many miles above, however, a small quantity of water is diverted from tributary streams into a flume used for transporting lumber from the mountains to Sanger. The total flow of the river at low and moderate stages is diverted into irrigation canals only a short distance below the station. The acquired water rights greatly exceed the low-water flow.

The data are of value in considering irrigation, power, and storage development, and in studying the flood and reclamation problems of Tulare Lake.

Prior to April 18, 1903, an inclined staff gage was used. On this date a Friez automatic water-stage register was installed for obtaining gage heights at this station, because of the remarkable diurnal fluctuations of stage, especially during the spring and early summer when the snow is melting rapidly. Not uncommonly the weekly record sheet shows a notably regular sinusoidal curve indicating an hourly change and a daily range of nearly 2 feet. No change has ever been made in the gage datum.

Discharge measurements from a cable about 500 feet below the gage or by wading.

The conditions for obtaining accurate discharge data at this station are very good. The stream is confined to its channel at all stages and the current is never too sluggish nor too swift. The channel has a gravel bottom which changes a little from year to year.

The estimates of discharge for the early years are somewhat in error, particularly at high stages, for which the values given are much too high. For periods subsequent to 1904 the data are fairly good, although the high-stage discharges are still excessive.

Discharge measurements of Kings River near Sanger, Cal., in 1895–1912.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1895.		*Feet.*	*Sec.-feet.*	1901.		*Feet.*	*Sec.-feet.*
Sept. 3	J. B. Lippincott	4.32	524	Jan. 31	S. G. Bennett	5.4	991
Nov. 24	do	3.80	248	Feb. 28	do	7.9	3,593
1896.				Apr. 4	do	6.4	1,915
Apr. 12	J. A. Vogleson	6.35	1,745	May 21	J. B. Lippincott	10.5	10,869
June 12	J. B. Lippincott	10.85	15,941	July 30	S. G. Bennett	7.54	3,179
Nov. 1	do	4.20	404	Oct. 17	do	4.1	301
1897.				1902.			
Feb. 13	J. B. Lippincott	5.18	1,021	Sept. 21	L. M. Lawson	4.0	217
Apr. 5	do	6.82	2,047	1903.			
June 1	do	10.02	8,838	Feb. 11	S. G. Bennett	5.35	1,025
July 15	A. Q. Campbell	7.17	3,313	Apr. 4	do	7.30	3,155
Sept. 9	do	4.10	295	21	do	6.90	2,370
Nov. 1	do	4.57	552	June 12	do	9.35	6,680
Dec. 22	J. B. Lippincott	4.70	515	Nov. 18	do	3.80	176
1898.				1904.			
Apr. 20	J. B. Lippincott	8.55	4,943	Jan. 30	F. W. Huber	3.94	210
May 29	do	7.14	2,672	Mar. 25	Murphy and Bennett	6.60	2,038
July 27	do	4.32	503	Apr. 27	A. C. Lootz	7.30	2,792
Aug. 31	do	3.77	244	May 30	do	10.00	10,034
Dec. 21	do	7.0	2,444	June 6	O. W. Peterson	10.85	12,827
1899.				30	F. R. S. Buttemer	7.80	3,704
Apr. 19	S. G. Bennett	8.8	5,409	July 19	do	6.02	1,468
May 15	do	8.15	4,422	27	do	6.50	2,008
June 3	do	7.85	3,954	Aug. 8	do	6.35	1,762
26	do	7.23	3,049	16	do	5.60	1,292
Aug. 2	do	4.66	608	Sept. 8	do	4.20	312
Sept. 4	do	3.8	206	29	do	6.37	1,740
Dec. 8	J. B. Lippincott	4.36	458	Oct. 7	do	7.25	2,704
1900.				15	do	6.70	2,138
Apr. 4	S. G. Bennett	6.54	2,035	29	do	5.47	1,054
May 16	do	9.2	6,436	Nov. 8	do	4.88	712
June 19	do	8.59	5,072	17	do	4.60	520
Aug. 10	do	4.3	427	25	do	4.40	445
Sept. 4	do	4.28	405	Dec. 2	do	4.42	445
27	do	3.82	220	9	do	4.30	368
Dec. 29	do	4.65	576				

Discharge measurements of Kings River near Sanger, Cal., in 1895–1912—Continued.

Date.	Hydrographer.	Gage height.	Discharge.
1905.		*Feet.*	*Sec.-feet.*
Mar. 21	F. R. S. Buttemer	6.91	2,406
May 22	R. S. Hawley	10.10	9,046
June 15	do	10.10	8,446
July 24	do	5.42	986
Aug. 19	do	4.33	382
Sept. 16	C. H. Lee	3.82	199
Oct. 21	Hawley and Lee	3.79	186
1906.			
Jan. 30	C. H. Lee	5.20	966
Mar. 30	do	8.20	4,380
May 12	do	10.80	10,500
22	R. S. Hawley	11.15	12,600
27	C. H. Lee	10.70	10,400
June 2	do	9.90	8,200
19	R. S. Hawley	13.10	21,600
July 18	do	11.40	13,200
27	C. H. Lee	11.20	11,800
Sept. 25	R. S. Hawley	5.18	768
Oct. 18	do	4.75	472
Nov. 13	do	4.63	398
1907.			
Apr. 29	W. F. Martin	9.76	8,400
June 4	do	11.95	15,300
Aug. 7	W. A. Lamb	7.22	2,870
31	do	5.30	794
Sept. 25	do	4.75	382
Nov. 8	do	4.70	384
1908.			
Feb. 26	W. F. Martin	5.45	1,040
29	do	6.75	2,300
May 6	W. A. Lamb	8.09	4,350
June 18	W. F. Martin	7.05	2,520
Aug. 25	W. V. Hardy	4.82	526
Sept. 1	do	4.63	383
1908.		*Feet.*	*Sec.-feet.*
Oct. 19	W. V. Hardy	4.73	416
Dec. 5	W. F. Martin	4.67	412
1909.			
Feb. 19	W. F. Martin	7.03	2,610
May 15	do	9.50	7,210
July 8	W. V. Hardy	9.25	6,550
14	do	9.85	8,300
Aug. 28	do	5.35	886
Oct. 28	do	4.42	274
1910.			
Feb. 8	J. E. Stewart	5.74	1,350
Apr. 5	do	7.98	3,940
May 13	do	10.28	8,830
31	do	10.40	9,100
July 9	W. V. Hardy	6.11	1,620
18	do	7.61	3,030
Aug. 23	J. E. Stewart	4.60	507
Sept. 29	do	4.20	240
1911.			
Feb. 20	J. E. Stewart	6.09	1,630
May 16	do	9.28	6,250
June 10	W. V. Hardy	11.50	12,200
13	H. J. Tompkins	12.30	14,700
16	W. V. Hardy	12.25	15,400
Sept. 13	J. E. Stewart	4.80	562
1912.			
Apr. 18	J. E. Stewart	5.89	1,360
20	do	5.61	1,130
May 10	M. W. Enderlein	6.85	2,454
11	do	7.45	3,566
June 2	J. E. Stewart	11.10	10,600
July 17	do	5.67	1,180

Daily gage height, in feet, of Kings River near Sanger, Cal., for 1895–1912.

Day.	Sept.	Day.	Sept.	Day.	Sept.	Day.	Sept.	Day.	Sept.	Day	Sept.
1895.		1895.		1895.		1895.		1895.		1895.	
1	.....	6	4.2	11	4.1	16	5.8	21	4.7	26	4.4
2	.....	7	4.2	12	4.2	17	5.4	22	4.6	27	4.3
3	4.3	8	4.2	13	6.6	18	.....	23	4.1	28	.....
4	4.3	9	4.2	14	8.0	19	4.9	24	4.5	29	4.2
5	4.3	10	4.1	15	6.4	20	4.8	25	4.4	30	4.2
										31	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895–96.												
1	4.2	4.1	4.0	(4.0)	5.3	5.3	(5.0)	(6.0)	(10.4)	(7.9)	(5.6)	(4.5)
2	4.2	4.1	4.0	(4.0)	5.1	5.1	(5.2)	(6.0)	(10.4)	7.6	(5.5)	(4.4)
3	4.2	4.1	4.1	(4.0)	5.1	5.3	(5.3)	(6.0)	(10.4)	(8.0)	5.5	(4.4)
4	4.1	4.1	4.1	(4.0)	5.1	5.3	(5.4)	(7.0)	(10.4)	(8.4)	(5.3)	4.4
5	4.1	4.1	4.1	(4.0)	5.0	5.3	(5.5)	(7.0)	(10.4)	8.7	(5.2)	(4.4)
6	4.1	6.4	4.0	(4.0)	4.9	5.3	(6.0)	(8.0)	(10.4)	(8.7)	(5.1)	(4.5)
7	4.1	4.1	4.0	(4.0)	4.9	5.2	(6.5)	(8.0)	10.4	(8.7)	5.0	4.5
8	4.1	4.1	4.0	(4.0)	4.9	5.3	(7.0)	(7.0)	(10.4)	(8.7)	(5.0)	(4.5)
9	4.0	4.1	4.0	(4.0)	4.9	5.4	(7.5)	(6.0)	(10.4)	(8.6)	4.9	(4.5)
10	4.0	4.1	.....	(4.0)	4.8	5.5	(8.0)	(5.5)	(11.4)	(8.6)	(4.9)	(4.5)
11	4.0	4.0	4.0	(4.0)	4.8	5.7	(7.0)	(5.5)	11.4	8.6	(4.9)	4.5
12	4.0	4.0	4.0	4.0	4.8	5.9	6.4	(5.5)	10.9	8.2	(4.8)	(4.4)
13	4.0	4.0	4.0	4.0	4.8	6.0	6.9	(5.5)	(10.7)	(7.8)	(4.8)	4.3
14	4.0	4.0	4.0	4.0	4.8	6.0	7.5	(7.0)	10.5	7.3	4.8	(4.3)
15	4.0	4.0	4.0	4.0	4.8	5.9	7.1	(7.0)	(10.6)	(7.2)	(4.8)	(4.2)
16	4.0	4.0	4.0	4.3	4.9	5.8	(6.0)	(8.0)	(10.8)	(7.1)	(4.8)	(4.1)
17	4.1	4.0	3.8	4.9	4.9	5.8	(5.0)	(8.0)	(10.9)	7.0	4.8	4.1
18	4.1	4.0	4.0	9.2	4.9	6.0	(4.0)	(8.0)	(11.0)	(6.9)	(4.9)	(4.1)
19	4.3	3.9	3.9	7.0	4.9	6.0	(4.5)	(8.0)	(10.7)	(6.7)	(4.9)	(4.0)
20	4.4	3.9	4.0	6.4	5.0	6.3	(5.0)	(8.0)	(10.4)	6.5	(5.0)	4.0

Daily gage height, in feet, of Kings River near Sanger, Cal., for 1895–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895–96.												
21	4.5	3.9	4.5	9.8	5.0	6.4	(5.0)	(8.0)	10.1	6.5	5.0	(4.0)
22	4.5	4.0	.....	7.1	4.9	6.4	(5.0)	(8.0)	(9.8)	8.5	(5.0)	(4.1)
23	4.5	3.9	.....	6.4	4.9	6.7	(5.5)	(8.0)	(9.5)	(7.5)	4.8	(4.2)
24	4.4	3.8	.....	5.9	4.9	6.9	(6.0)	(8.0)	(9.2)	(7.0)	(4.8)	4.2
25	4.3	3.8	.....	5.7	5.1	8.8	(6.5)	(9.0)	8.9	(6.5)	(4.7)	(4.2)
26	4.3	3.9	.....	5.7	5.1	(8.0)	(8.0)	(10.0)	(8.8)	(6.3)	(4.7)	(4.1)
27	4.2	3.9	.....	5.5	5.1	7.2	(8.0)	(11.0)	(8.8)	6.2	(4.7)	4.1
28	4.2	3.9	.....	6.0	5.5	(6.5)	(7.5)	(12.0)	8.8	(6.0)	(4.6)	(4.1)
29	4.1	4.0	.....	5.7	5.5	(6.0)	(6.0)	(12.0)	(8.5)	(5.8)	4.6	(4.0)
30	4.1	4.3	.....	5.4	.....	(5.5)	(6.0)	(11.0)	(8.2)	5.6	(4.6)	(4.0)
31	4.1	.....	.....	5.3	.....	(5.0)	.....	(10.0)	.....	(5.6)	4.5	.....
1896–97.												
1	(3.9)	4.2	(4.3)	4.3	9.1	6.0	6.6	9.9	10.2	7.4	5.5	4.3
2	3.9	(4.2)	4.3	.....	.....	6.02	6.6	9.1	10.4	7.8	5.3	4.3
3	(3.9)	(4.2)	(4.3)	.....	.....	6.03	6.5	9.9	10.2	8.0	5.3	4.4
4	(3.9)	(4.1)	(4.3)	.....	5.9	6.0	6.6	10.5	10.2	7.7	5.3	4.3
5	(3.9)	4.1	(4.3)	.....	5.8	5.9	6.8	10.9	10.3	7.5	5.1	4.3
6	(3.8)	(4.1)	4.3	.....	.....	7.7	7.5	11.3	10.4	7.4	5.1	4.2
7	(3.8)	(4.1)	(4.3)	.....	.....	8.2	7.2	11.0	10.3	7.3	5.0	4.1
8	3.8	(4.1)	(4.3)	.....	.....	6.8	7.5	10.9	10.0	6.7	5.2	4.1
9	(3.8)	(4.2)	(4.3)	.....	.....	6.4	7.9	11.0	10.2	6.6	5.0	4.1
10	(3.8)	(4.1)	(4.3)	.....	5.6	6.4	8.0	11.0	10.2	6.7	5.0	4.0
11	3.8	4.9	(4.3)	.....	.....	6.2	8.3	11.3	10.0	6.5	4.9	4.1
12	(3.8)	4.6	4.3	4.3	.....	6.2	8.8	11.4	9.8	7.0	4.9	4.0
13	(3.8)	(4.5)	4.2	.....	.....	6.0	9.0	11.4	9.7	7.0	4.8	4.0
14	(3.8)	(4.4)	(4.2)	.....	.....	5.9	9.3	11.6	9.6	7.2	4.8	4.0
15	3.8	4.3	(4.3)	4.3	.....	5.8	9.6	11.3	9.0	7.2	4.7	4.0
16	(3.8)	(4.3)	(4.4)	.....	.....	5.9	9.7	10.6	8.4	7.2	4.7	4.0
17	(3.8)	(4.2)	4.4	.....	.....	6.0	9.9	10.5	7.6	6.8	4.7	3.8
18	(3.8)	(4.1)	(4.4)	.....	.....	5.8	10.1	10.6	7.4	6.5	4.7	3.9
19	(3.8)	4.1	(4.3)	4.1	6.3	6.3	9.5	10.9	7.3	6.3	4.8	3.7
20	(3.8)	(4.1)	4.2	.....	6.0	6.1	8.8	11.0	7.0	6.2	4.8	3.7
21	3.8	(4.1)	(4.2)	.....	5.9	5.9	8.4	11.1	7.0	6.1	4.9	3.8
22	(3.8)	4.1	(4.2)	.....	5.7	5.9	8.8	11.6	7.3	6.1	5.1	3.8
23	(3.8)	(4.5)	4.2	.....	5.5	5.7	8.3	12.3	7.3	5.9	5.0	3.8
24	(3.8)	(5.0)	(4.2)	4.3	5.5	6.0	8.2	12.4	7.4	6.0	5.0	3.9
25	3.8	5.4	(4.2)	.....	5.5	6.2	8.4	12.0	7.3	6.0	4.9	3.9
26	(3.9)	4.8	(4.2)	.....	5.8	6.8	9.2	11.5	7.3	5.9	4.8	3.8
27	(4.3)	(4.6)	4.2	.....	6.0	6.7	9.5	11.4	7.3	5.9	4.7	3.9
28	4.3	(4.4)	(4.2)	4.3	6.0	7.8	9.7	11.5	7.2	5.5	4.7	3.9
29	(4.3)	4.2	(4.2)	.....	.....	7.2	9.6	11.5	7.1	5.5	4.6	3.9
30	(4.3)	(4.2)	(4.3)	.....	.....	6.9	9.7	11.1	7.2	5.4	4.5	3.9
31	(4.3)	.....	4.3	4.7	.....	6.5	.....	11.1	.....	5.4	4.3	.....
1897–98.												
1	4.0	4.6	4.9	4.6	4.4	5.0	5.4	7.7	7.6	5.8	4.2	3.7
2	4.0	4.6	4.9	4.5	4.5	5.2	5.5	7.3	7.3	5.7	4.2	3.7
3	4.0	4.6	5.0	4.5	4.5	5.1	5.5	7.4	7.0	5.5	4.2	3.7
4	3.9	4.5	4.9	4.5	4.4	5.0	5.5	7.4	7.1	5.3	4.2	3.7
5	3.9	4.4	4.9	4.5	4.4	4.8	5.7	7.0	7.3	5.2	4.2	3.7
6	3.9	4.3	4.7	4.5	5.0	4.9	5.7	7.1	6.8	5.2	4.2	3.7
7	3.9	4.3	4.7	4.6	4.6	5.1	5.7	7.2	6.8	5.1	4.2	3.6
8	3.9	4.3	9.8	4.6	5.6	5.2	5.8	7.5	6.5	5.1	4.1	3.6
9	3.8	4.4	6.3	4.7	5.2	5.2	6.2	8.1	6.5	5.1	4.1	3.6
10	3.8	4.4	5.7	4.6	5.0	5.2	6.6	8.7	6.4	5.1	4.1	3.6
11	3.8	4.3	5.3	4.5	5.0	5.6	6.7	9.0	6.4	5.0	4.1	3.6
12	3.9	4.3	5.0	4.6	4.9	5.6	6.9	9.2	6.4	4.9	4.0	3.5
13	4.0	4.3	5.0	4.5	4.9	5.5	7.1	8.7	6.7	4.9	4.0	3.5
14	4.0	4.4	5.2	4.5	4.9	5.3	7.6	8.1	6.8	4.9	4.0	3.5
15	4.6	4.3	5.1	4.5	4.8	5.3	8.2	7.7	6.8	4.8	4.0	3.5
16	4.0	4.2	4.7	4.5	4.9	5.3	8.3	7.7	7.0	4.7	4.0	3.5
17	4.3	4.2	4.8	4.5	4.9	5.2	8.3	7.7	7.3	4.7	4.0	3.5
18	4.3	4.1	4.8	4.5	4.9	5.2	8.5	8.1	7.3	4.7	4.0	(3.5)
19	4.3	4.1	4.7	4.5	4.9	5.0	8.7	7.6	6.8	4.7	4.0	(3.5)
20	4.3	4.1	4.7	4.4	4.7	4.5	8.7	7.3	6.7	4.5	4.0	(3.5)
21	4.2	6.5	4.7	4.4	4.7	5.0	7.7	7.2	6.7	4.5	3.9	(3.5)
22	4.1	5.1	4.7	4.3	4.7	5.0	7.8	7.3	6.5	4.5	3.9	(3.5)
23	4.1	5.4	4.8	4.4	4.7	5.0	8.4	7.4	6.3	4.4	3.8	(3.5)
24	4.3	7.0	4.8	4.3	4.6	5.1	8.7	7.3	6.3	4.4	3.8	(3.5)
25	4.5	5.9	4.8	4.3	5.4	5.2	9.1	7.6	6.1	4.4	3.8	(3.5)

Daily gage height, in feet, of Kings River near Sanger, Cal., for 1895–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897–98.												
26	4.5	5.4	4.6	4.3	5.1	5.2	9.4	8.5	6.4	4.3	3.8	(3.5)
27	4.5	5.0	4.7	4.4	5.0	5.1	9.5	8.1	6.2	4.3	3.7	(3.6)
28	4.6	5.0	4.6	4.3	5.0	5.2	9.7	7.5	5.9	4.3	3.8	(3.9)
29	4.6	4.9	4.6	4.3	.....	5.4	8.7	7.1	5.9	4.3	3.8	(4.5)
30	4.6	4.7	4.6	4.3	.....	5.5	7.7	7.1	5.8	4.3	3.8	(5.0)
31	4.6	.....	4.6	4.3	.....	5.5	.....	7.1	.....	4.3	3.8	.....
1898–99.												
1	(4.9)	3.7	3.9	3.8	4.6	4.9	6.4	6.9	8.5	7.3	4.7	3.8
2	4.6	3.8	3.9	3.8	4.7	4.9	6.4	6.8	8.4	7.3	4.7	3.8
3	4.3	3.8	3.9	4.0	4.6	4.9	6.5	6.8	8.4	7.3	4.6	3.8
4	4.4	3.7	3.8	4.2	4.4	4.9	6.6	6.8	8.0	7.1	4.5	3.9
5	4.2	3.7	3.8	3.9	4.4	4.9	7.6	6.0	8.7	6.5	4.4	3.9
6	4.2	3.7	3.8	3.9	4.4	5.0	7.8	7.0	10.0	6.8	4.4	3.8
7	4.1	3.7	3.9	4.0	4.3	5.0	8.0	7.1	10.1	6.5	4.5	3.8
8	4.1	3.7	3.9	4.2	4.4	5.1	8.4	7.8	10.0	6.3	4.5	3.7
9	4.0	3.7	3.9	4.1	4.4	5.2	8.6	7.7	10.2	6.2	4.4	3.8
10	4.1	3.7	3.8	4.2	4.5	5.1	8.6	7.8	10.3	6.1	4.4	3.7
11	3.9	3.7	3.8	5.8	4.5	5.1	8.7	7.9	10.4	6.0	4.4	3.7
12	3.9	3.7	3.6	5.0	4.5	4.9	8.7	7.7	10.5	5.9	4.3	3.7
13	3.9	3.7	3.6	4.7	4.5	4.8	8.7	7.8	10.0	5.8	4.3	3.8
14	3.9	3.7	3.6	4.6	4.6	4.8	9.0	7.9	9.4	5.7	4.2	3.7
15	3.9	3.7	3.7	4.5	4.6	4.7	9.3	7.7	9.6	5.6	4.2	3.7
16	3.9	3.7	3.7	4.6	4.6	4.9	9.5	7.8	9.5	5.6	4.2	3.7
17	3.9	3.7	3.7	4.6	4.7	4.9	8.9	7.9	9.5	5.5	4.2	3.7
18	3.9	3.7	3.7	4.6	4.7	5.0	9.1	8.0	9.4	5.4	4.1	3.7
19	3.9	3.7	3.7	4.6	4.8	5.0	8.6	8.2	9.1	5.5	4.2	3.6
20	3.9	3.8	3.7	4.5	5.1	5.4	9.0	7.7	9.0	5.4	4.1	3.7
21	3.9	3.9	6.0	4.5	5.4	5.5	9.2	8.3	8.5	5.3	4.1	3.6
22	3.9	3.9	5.0	4.5	5.4	6.4	9.3	8.2	8.3	5.3	4.0	3.6
23	3.8	3.8	4.0	4.6	5.3	7.8	9.0	8.3	8.1	5.2	4.1	3.6
24	3.8	3.8	3.9	4.5	5.3	9.7	8.3	8.4	8.1	5.1	4.0	3.6
25	3.8	3.8	4.0	4.5	5.3	13.8	8.3	8.0	7.7	5.3	4.0	3.6
26	3.8	3.8	4.0	4.5	5.1	8.2	7.7	7.9	7.5	5.3	3.9	3.6
27	3.7	3.7	4.0	4.5	4.9	7.7	7.5	7.9	7.1	5.2	3.9	3.6
28	3.7	3.8	4.0	4.6	4.9	7.1	7.7	8.4	7.3	5.1	3.9	3.6
29	3.7	3.8	4.0	4.6	.....	7.3	6.6	8.5	7.3	5.0	3.9	3.6
30	3.7	3.8	3.9	4.7	.....	6.8	7.1	8.4	7.3	4.9	3.9	3.6
31	3.7	.....	3.8	4.6	.....	6.2	.....	7.9	.....	4.8	3.8	.....
1899–1900.												
1	3.6	4.2	4.5	6.4	5.0	5.0	7.3	6.6	9.6	7.0	4.6	3.9
2	3.6	4.2	4.4	6.3	5.0	5.0	6.9	6.5	9.7	6.8	4.7	3.9
3	3.6	4.1	4.4	11.3	5.0	5.0	6.8	6.5	9.4	6.5	4.7	3.3
4	3.6	4.2	4.4	8.4	5.0	6.9	6.5	6.7	9.4	6.3	4.7	4.8
5	3.6	4.2	4.5	7.0	5.0	6.1	6.6	7.1	9.3	6.2	4.6	4.5
6	3.6	4.1	4.4	6.6	4.9	5.7	6.5	7.3	9.3	6.1	4.5	4.3
7	3.6	4.1	4.3	6.3	4.9	5.5	6.9	7.5	9.3	6.4	4.8	4.2
8	3.6	4.05	4.3	6.0	4.9	5.3	6.4	7.8	9.2	6.4	4.4	4.2
9	3.6	4.8	4.4	5.9	4.8	5.4	6.1	8.2	8.9	6.3	4.4	4.1
10	3.6	5.5	4.2	5.7	4.8	5.7	6.5	8.6	8.7	6.3	4.3	4.1
11	3.65	4.8	4.3	5.6	4.8	6.0	6.3	8.9	8.5	6.2	4.3	4.0
12	3.7	5.4	4.4	5.5	4.8	6.1	6.2	7.9	8.4	6.1	4.2	4.0
13	3.85	5.1	4.4	5.5	4.8	.....	6.2	7.7	8.5	6.0	4.1	3.9
14	3.95	4.9	4.6	5.5	4.8	.....	6.4	7.9	8.3	5.8	4.1	3.9
15	4.0	4.7	5.4	5.5	4.8	.....	6.0	8.4	8.1	5.7	4.1	3.9
16	4.5	5.7	8.6	5.5	4.8	.....	6.2	9.1	8.0	5.6	4.1	3.9
17	4.1	5.2	6.4	5.4	4.8	.....	6.3	9.8	8.0	5.4	4.9	3.9
18	4.2	5.0	5.8	5.5	4.9	6.7	7.1	10.0	8.3	5.3	4.1	3.9
19	4.25	4.8	5.6	5.4	5.0	6.6	7.0	10.0	8.6	5.3	4.0	3.8
20	4.25	4.6	5.4	5.4	5.1	6.5	7.2	9.9	8.7	5.3	4.0	3.8
21	4.3	4.7	5.3	5.4	5.0	6.5	7.3	9.9	8.6	5.3	4.0	3.8
22	5.65	5.0	5.2	5.3	5.0	6.6	7.0	10.0	8.5	5.4	4.1	3.7
23	5.4	4.8	5.2	5.3	5.0	6.5	6.9	10.2	8.2	5.2	4.0	3.7
24	4.7	4.7	5.2	5.3	5.0	6.5	6.9	9.5	8.1	5.7	4.0	3.8
25	4.5	4.7	5.2	5.3	5.0	6.5	6.8	9.2	8.1	5.0	3.9	3.7
26	4.45	4.7	5.2	5.2	5.0	6.8	6.7	10.0	8.2	4.9	3.9	3.8
27	4.45	4.7	5.2	5.1	5.0	6.6	6.8	9.8	8.0	4.8	3.9	3.8
28	4.4	4.6	5.1	5.1	5.0	6.6	6.5	9.8	7.8	4.8	3.9	3.8
29	4.4	4.6	5.1	5.1	.....	6.7	6.5	9.5	7.7	4.7	3.9	3.8
30	4.35	4.5	7.1	5.1	.....	6.8	6.6	10.0	7.4	4.7	3.8	3.8
31	4.3	.....	6.4	5.1	.....	7.1	.....	10.0	.....	4.6	3.8	.....

Daily gage height, in feet, of Kings River near Sanger, Cal., for 1895–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1900–1901.												
1	3.8	3.9	5.3	4.6	5.7	8.2	6.5	9.0	11.4	11.0	7.7	5.0
2	3.7	4.0	5.3	4.5	(5.4)	8.3	6.6	8.8	11.8	10.7	7.9	4.9
3	3.8	3.9	5.1	4.6	(5.4)	8.2	6.8	8.8	12.0	10.3	7.7	4.8
4	4.0	3.9	5.1	4.6	7.8	8.1	6.5	8.9	12.3	9.6	9.0	4.7
5	4.1	3.9	5.1	11.0	8.4	8.0	6.45	9.2	12.2	9.8	9.0	4.7
6	4.2	3.9	5.1	12.0	7.3	8.1	6.45	9.5	12.3	10.3	9.1	4.7
7	4.0	3.8	5.2	15.8	7.0	8.1	6.4	10.0	12.2	10.2	8.0	4.7
8	4.0	3.8	5.2	11.1	6.8	7.9	6.3	10.3	12.1	10.0	7.6	4.6
9	4.0	3.9	5.2	9.4	6.5	7.7	6.2	10.8	11.5	9.7	7.3	4.6
10	3.9	3.9	5.0	(7.1)	6.3	7.45	6.2	11.2	11.0	9.5	7.2	4.5
11	3.9	3.9	5.0	(7.0)	6.2	7.3	6.3	11.7	10.4	9.4	6.8	4.5
12	3.9	3.8	4.9	(6.9)	6.1	7.25	6.6	11.8	10.1	9.3	6.6	4.45
13	3.9	3.8	4.9	(6.7)	6.0	7.1	7.0	11.5	9.8	9.4	6.4	4.4
14	3.9	3.8	4.8	(6.6)	6.1	7.0	7.5	11.4	9.5	8.9	6.2	4.3
15	3.9	3.8	5.0	(6.5)	6.2	6.85	7.6	11.6	9.4	8.7	6.1	4.4
16	3.9	4.0	4.8	(6.0)	6.2	6.9	7.8	11.8	10.3	8.5	6.7	4.3
17	3.9	7.3	4.8	(5.7)	6.3	7.0	8.0	12.3	11.0	8.7	6.4	4.3
18	3.9	4.8	5.0	(5.7)	9.2	7.0	8.4	12.4	11.1	8.7	6.8	4.3
19	3.9	4.7	4.9	(5.7)	9.1	7.2	8.8	11.5	10.9	8.5	6.6	4.3
20	3.9	4.7	4.8	(5.7)	9.0	7.2	9.1	11.2	11.1	8.4	6.1	4.3
21	4.3	12.4	4.8	(5.5)	8.5	7.3	9.3	10.5	11.4	8.5	5.9	4.3
22	4.2	8.0	4.8	(6.0)	9.4	7.3	9.4	10.1	11.8	8.2	5.7	4.3
23	4.1	6.5	4.9	(6.2)	8.5	7.2	9.5	10.0	11.7	8.5	5.5	4.3
24	4.1	6.2	4.9	(6.2)	9.2	7.1	9.8	9.9	10.8	8.3	5.3	4.6
25	4.0	6.0	.....	(6.2)	8.4	7.0	10.0	9.6	10.6	8.0	5.2	4.6
26	4.0	5.8	4.7	(6.2)	8.2	7.1	9.7	9.2	9.9	8.0	5.1	4.6
27	4.0	5.5	4.7	(6.0)	8.0	6.9	9.8	9.1	10.4	7.8	5.0	4.5
28	4.0	5.5	4.7	(5.8)	8.0	6.7	9.7	9.0	10.8	8.0	5.0	4.5
29	3.9	5.3	4.7	(5.6)	.....	6.6	9.1	9.1	11.6	7.7	5.0	4.4
30	3.9	5.4	4.6	(5.4)	.....	6.6	10.5	9.4	11.8	7.6	5.0	4.4
31	3.9	.....	4.6	5.4	.....	6.6	.....	10.3	.....	7.8	4.9	.....
1901–2.												
1	4.4	4.9	5.3	4.4	4.1	5.6	6.1	7.7	8.9	7.8	5.2	4.1
2	4.4	4.8	4.9	4.4	4.2	8.3	6.1	7.8	8.9	7.8	5.2	4.0
3	4.3	4.8	4.9	4.4	4.2	6.6	6.0	8.0	9.1	7.1	5.1	4.0
4	4.4	4.9	4.9	4.4	4.1	5.9	6.1	8.1	9.9	6.7	5.0	4.0
5	4.3	4.9	5.6	4.5	4.2	5.8	6.1	8.3	10.0	6.5	4.9	4.0
6	4.3	5.0	5.6	4.4	4.2	5.8	6.1	8.9	10.0	6.4	4.9	4.0
7	4.3	4.9	5.6	4.4	4.3	5.8	13.1	8.6	10.7	6.4	5.0	4.0
8	4.2	4.8	5.3	4.4	4.3	5.6	9.1	9.3	10.7	6.5	5.1	3.9
9	4.2	4.7	5.2	4.4	4.3	7.4	8.0	9.6	11.0	6.5	5.2	4.0
10	4.2	5.0	5.1	4.3	4.2	6.3	7.7	9.8	10.9	6.4	5.2	3.9
11	4.2	4.8	5.0	4.3	4.3	5.9	7.5	9.4	10.4	6.6	5.1	4.0
12	4.2	5.0	4.9	4.4	4.2	5.8	7.6	10.0	10.9	6.3	5.0	3.9
13	4.2	5.0	4.6	4.4	4.2	5.7	7.7	10.0	11.0	6.4	5.0	4.0
14	4.1	5.0	4.7	4.3	4.2	5.7	7.9	9.3	10.1	6.2	5.0	4.0
15	4.1	4.4	4.7	4.3	4.2	5.5	8.1	8.8	10.0	6.1	4.9	4.0
16	4.1	4.8	4.6	4.3	4.3	5.5	8.2	8.8	10.0	6.0	4.7	4.0
17	4.1	4.7	4.7	4.3	4.5	5.5	8.4	9.3	9.6	5.9	4.7	4.1
18	4.1	4.6	4.6	4.3	4.8	5.7	8.7	9.4	9.6	5.8	4.6	4.0
19	4.1	4.6	4.5	4.2	4.6	5.7	9.2	8.6	9.6	5.7	4.5	4.0
20	4.1	4.5	4.5	4.2	4.4	5.7	9.0	8.2	9.7	5.6	4.5	4.0
21	4.1	4.5	4.5	4.2	4.5	5.6	8.1	7.9	9.7	5.7	4.4	4.0
22	4.1	4.7	4.4	4.2	4.7	5.6	7.9	8.0	9.3	5.6	4.3	3.9
23	4.1	4.7	4.45	4.2	4.9	5.6	7.4	8.4	8.9	5.5	4.3	3.9
24	4.1	4.6	4.45	4.3	4.8	5.5	7.4	8.6	9.0	5.5	4.2	3.9
25	4.2	4.5	4.35	4.2	5.5	5.5	7.3	9.2	9.0	5.5	4.2	3.9
26	4.2	4.5	4.35	4.3	7.3	5.5	7.1	9.1	8.7	5.4	4.1	3.9
27	6.6	4.4	4.3	4.3	6.6	5.4	7.1	9.7	8.4	5.5	4.1	3.8
28	6.0	4.4	4.3	4.2	5.8	5.5	7.2	10.3	7.9	5.6	4.1	3.8
29	5.4	5.6	4.3	4.2	.....	5.5	7.3	11.1	8.1	5.5	4.1	3.8
30	5.3	6.0	4.3	4.1	.....	5.9	7.9	10.6	8.0	5.4	4.0	3.8
31	5.0	.....	4.3	4.1	.....	6.0	.....	10.4	.....	5.4	4.1	.....
1902–3.												
1	3.8	4.0	4.2	4.2	6.0	5.1	9.0	8.6	10.4	8.4	5.2	4.1
2	3.8	4.0	4.3	4.2	5.6	5.0	8.1	8.9	10.9	8.3	5.1	4.1
3	3.8	3.9	4.3	4.2	5.5	5.0	7.5	9.2	10.7	7.9	5.1	4.1
4	3.7	3.9	4.3	4.2	5.5	5.4	7.5	9.5	10.1	7.7	5.0	4.1
5	3.7	3.9	4.2	4.2	5.4	5.8	7.1	9.4	10.5	7.4	5.0	4.2

Daily gage height, in feet, of Kings River near Sanger, Cal., for 1895–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1902–3.												
6	3.7	3.9	4.3	4.2	5.3	5.6	7.1	9.7	10.8	7.2	4.9	4.1
7	3.7	3.9	4.4	4.1	5.1	5.3	6.9	10.1	10.7	6.9	4.9	4.1
8	3.7	3.8	4.4	4.1	5.4	5.3	7.2	10.2	10.0	6.6	4.8	4.0
9	3.7	3.9	4.3	4.2	5.3	5.6	7.5	10.6	9.8	6.4	4.8	4.0
10	3.7	4.0	4.3	4.2	5.2	5.5	8.2	10.7	9.8	6.3	4.8	4.0
11	3.7	5.6	5.4	4.1	5.4	5.5	7.4	11.1	9.9	6.3	4.8	4.0
12	3.7	4.9	5.2	4.1	5.4	5.5	7.1	11.6	9.6	6.4	4.7	4.0
13	3.7	4.6	4.9	4.1	5.2	5.5	7.1	(11.7)	9.7	6.4	4.7	4.0
14	3.7	4.5	4.5	4.0	5.1	5.5	7.1	(11.7)	9.9	6.4	4.7	3.9
15	3.8	4.5	4.4	4.1	5.0	5.7	6.9	(11.7)	9.6	6.3	4.7	3.9
16	3.7	4.3	4.4	4.1	5.5	5.6	6.7	11.6	8.7	6.2	4.7	3.9
17	3.7	4.3	4.3	4.0	5.0	5.8	7.1	10.9	8.6	6.2	4.6	3.9
18	3.7	4.3	4.4	4.0	5.0	5.6	6.6	10.2	8.9	6.3	4.5	3.9
19	3.7	4.3	4.4	4.0	5.0	5.5	6.6	9.9	9.1	6.4	4.5	3.9
20	3.7	4.7	4.3	4.0	5.0	5.5	6.6	10.0	9.2	6.3	4.4	3.9
21	3.7	4.4	4.4	4.1	5.1	5.4	6.8	9.6	9.4	6.2	4.4	3.8
22	3.7	4.4	4.3	4.0	5.1	5.5	7.3	9.2	9.2	6.1	4.4	3.8
23	3.7	4.4	4.3	4.1	5.1	5.5	7.9	9.3	9.1	6.1	4.4	3.8
24	4.5	4.4	4.3	4.1	5.0	6.3	8.5	(9.1)	9.2	6.0	4.4	3.8
25	4.4	4.4	4.4	4.3	5.1	8.2	8.4	(8.9)	9.3	5.4	4.3	3.8
26	4.1	4.4	4.3	4.5	5.0	6.9	8.6	(8.7)	9.4	5.4	4.3	3.7
27	4.1	4.4	4.4	7.3	5.0	6.6	8.5	(8.5)	9.2	5.3	4.2	3.8
28	4.1	4.4	4.5	11.0	5.0	6.5	8.0	(8.4)	8.9	5.3	4.2	3.8
29	4.1	4.3	4.3	6.7	.....	6.9	8.0	8.4	8.7	5.2	4.2	3.8
30	4.1	4.3	4.3	6.0	.....	7.0	8.4	10.6	8.5	5.2	4.1	3.9
31	4.0	.....	4.2	5.9	.....	7.8	.....	10.7	.....	5.2	4.1	.....
1903–4.												
1	3.9	3.8	4.0	3.85	3.9	5.3	7.0	7.35	10.15	7.55	5.95	4.5
2	4.0	3.8	4.0	3.85	3.9	5.3	6.95	7.2	10.4	7.45	6.15	4.45
3	4.0	3.8	4.0	3.85	3.9	5.45	6.9	7.3	11.2	7.25	5.95	4.4
4	4.1	3.7	3.9	3.85	3.9	5.55	6.75	7.75	10.95	7.15	5.75	4.4
5	4.0	3.7	3.9	3.85	4.0	5.5	6.9	8.45	10.75	7.15	5.65	4.35
6	4.0	3.7	3.9	3.9	4.05	5.3	7.1	9.15	10.65	7.15	5.7	4.3
7	4.0	3.7	3.9	3.8	5.0	5.4	7.4	9.9	10.3	7.2	6.05	4.25
8	4.0	3.8	3.9	3.8	4.1	5.55	7.6	10.05	9.7	7.2	6.25	4.25
9	3.9	3.8	3.8	3.8	4.0	5.65	7.9	10.25	9.8	6.95	6.45	4.2
10	3.9	3.8	3.8	3.8	3.9	6.05	8.2	10.45	9.85	6.75	6.2	4.15
11	3.9	3.8	3.8	3.8	4.0	6.9	8.45	10.7	10.0	6.55	5.85	4.15
12	3.9	3.8	3.8	3.8	4.05	5.9	8.65	10.95	10.05	6.6	5.55	4.1
13	3.8	3.8	3.8	3.8	4.4	(5.9)	8.95	11.15	10.1	6.45	5.35	4.1
14	3.8	3.8	3.8	3.8	4.35	(5.9)	8.75	11.25	9.8	6.3	5.4	4.1
15	3.8	3.9	3.8	3.8	4.25	(5.9)	8.75	11.25	9.7	6.15	5.55	4.1
16	3.8	4.0	3.8	3.8	4.5	6.0	8.4	11.4	9.65	6.05	5.65	4.35
17	3.8	3.9	3.8	3.8	6.9	5.95	8.0	11.45	9.45	6.0	5.65	4.35
18	3.8	3.9	3.9	3.9	5.25	6.2	8.1	11.3	9.25	6.0	5.4	4.35
19	3.8	3.9	3.9	3.9	5.0	6.65	8.5	10.3	9.0	6.05	5.2	4.3
20	3.8	3.9	3.9	3.8	4.7	8.65	8.1	10.05	9.0	6.0	5.1	4.3
21	3.8	4.4	3.9	3.7	4.7	7.2	7.65	10.15	8.6	6.0	4.95	4.3
22	3.8	4.3	3.9	3.8	5.05	6.65	7.65	10.45	8.45	6.0	4.85	4.25
23	3.7	4.2	3.9	3.9	5.05	9.7	7.25	11.1	8.5	6.25	4.75	4.25
24	3.7	4.2	3.9	4.0	5.35	7.5	7.15	11.2	8.3	6.35	4.8	5.6
25	3.7	4.2	3.9	3.95	(5.5)	6.85	7.45	11.25	8.1	6.25	4.85	7.5
26	3.7	4.1	3.9	3.95	5.6	6.55	7.65	10.65	7.85	6.3	4.8	6.7
27	3.7	4.1	3.9	3.95	5.4	6.55	7.35	9.95	7.8	6.4	4.85	6.25
28	3.8	4.0	3.9	3.9	6.4	7.15	7.2	10.05	7.75	6.25	4.8	6.05
29	3.7	4.0	3.9	3.9	5.55	8.75	7.05	10.35	7.75	5.95	4.75	6.15
30	3.7	4.0	3.8	3.9	.....	7.75	7.3	10.25	7.65	5.7	4.6	6.2
31	3.8	.....	3.9	3.9	.....	7.20	.....	10.15	.....	5.65	4.55	.....
1904–5.												
1	6.3	5.3	4.5	4.65	5.0	5.5	6.25	8.9	9.0	7.8	4.95	4.1
2	6.4	5.3	4.45	4.55	5.65	5.7	6.5	8.35	9.05	7.6	4.85	4.05
3	6.45	5.35	4.45	4.45	5.6	5.85	6.6	8.05	9.15	7.5	4.8	4.0
4	6.5	5.2	4.4	4.45	5.45	5.95	6.7	7.7	8.85	7.4	4.8	4.0
5	6.65	5.1	4.3	4.4	5.7	5.9	6.9	7.55	8.7	7.3	4.7	4.0
6	7.3	5.05	4.25	4.4	5.65	5.9	7.05	7.65	9.05	7.25	4.65	4.0
7	7.35	5.0	4.2	(4.4)	5.4	5.9	7.2	7.75	9.35	7.25	4.6	4.0
8	7.35	4.95	4.2	(4.4)	5.3	5.95	7.2	7.9	9.3	7.2	4.6	3.95
9	7.35	4.9	4.25	4.4	5.25	5.95	7.25	7.7	9.1	7.2	4.6	3.95
10	6.95	4.9	4.25	4.35	5.15	5.9	7.25	7.4	9.4	7.2	4.65	3.9

Daily gage height, in feet, of Kings River near Sanger, Cal., for 1895–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904–5.												
11	8.05	4.85	4.2	4.4	5.05	5.9	7.0	7.4	9.8	7.15	4.6	3.9
12	7.95	4.8	4.2	4.3	5.0	5.95	6.75	7.4	10.25	7.0	4.55	3.9
13	7.15	4.8	4.3	4.2	4.85	7.15	6.6	7.45	10.3	6.7	4.55	3.9
14	6.8	4.75	4.2	4.35	4.85	7.35	6.6	7.95	10.2	6.4	4.5	3.9
15	6.65	4.7	4.2	(4.35)	4.85	6.65	6.9	8.8	10.0	6.2	4.45	3.9
16	6.45	4.75	4.2	4.35	5.0	6.55	7.05	9.6	9.9	6.0	4.45	3.85
17	6.2	4.75	4.2	4.4	5.4	6.75	7.0	10.25	9.85	5.85	4.4	3.8
18	6.05	4.65	4.1	4.4	5.25	6.75	7.3	10.15	9.6	5.75	4.4	3.8
19	5.95	4.65	4.1	4.35	5.2	7.0	7.2	10.15	9.4	5.65	4.35	3.8
20	5.85	4.55	4.15	4.45	5.15	7.2	6.9	10.05	9.4	5.6	4.3	3.8
21	5.85	4.6	4.15	4.7	5.1	6.9	6.85	10.15	9.45	5.55	4.3	3.8
22	5.8	4.55	4.2	4.8	5.1	6.55	6.8	10.15	9.4	5.55	4.3	3.75
23	5.8	4.55	4.15	4.6	5.15	6.4	6.8	9.95	8.95	5.5	4.3	3.75
24	5.8	(4.5)	4.15	4.6	5.2	6.5	7.1	9.95	8.45	5.5	4.25	3.75
25	5.75	4.4	4.45	4.55	5.25	6.6	7.5	10.15	8.2	5.5	4.2	3.75
26	5.7	4.4	4.25	4.5	5.3	6.8	7.5	10.15	8.25	5.5	4.2	3.7
27	5.6	4.4	4.2	4.45	5.3	6.7	7.75	9.4	8.05	5.45	4.2	3.7
28	5.55	4.5	4.3	4.45	5.35	6.4	8.2	8.85	7.95	5.4	4.15	3.7
29	5.45	4.5	4.2	4.45	.....	6.55	8.75	8.5	8.0	5.25	4.1	3.75
30	5.4	4.5	4.3	4.45	.....	6.4	9.05	8.65	8.0	5.15	4.1	3.95
31	5.35	.....	4.6	4.5	.....	6.25	.....	8.9	.....	5.05	4.1	.....
1905–6.												
1	4.05	3.8	4.1	4.25	5.1	5.85	9.35	8.05	10.0	12.85	9.8	6.6
2	4.0	3.8	4.05	3.9	5.1	5.7	8.5	8.3	9.95	12.95	9.8	6.45
3	4.0	3.8	4.0	3.9	5.1	5.8	8.15	8.75	10.15	13.1	9.8	6.35
4	3.9	3.8	4.1	4.0	5.1	6.5	7.9	9.3	10.15	13.25	9.8	6.3
5	3.85	3.8	4.15	4.05	5.1	6.5	7.7	9.8	10.95	13.1	9.1	6.2
6	3.85	3.8	4.1	4.1	5.1	6.2	7.55	9.85	10.35	13.0	9.2	6.1
7	3.8	3.8	4.1	4.1	5.1	6.2	7.4	10.2	10.25	12.6	9.2	5.95
8	3.8	3.8	4.1	.....	5.1	6.3	7.4	10.7	10.75	12.7	9.2	5.85
9	3.8	3.8	4.05	4.0	5.2	6.35	7.6	11.0	11.45	12.7	8.8	5.9
10	3.8	3.8	4.0	4.0	5.3	6.4	8.1	11.2	11.95	12.6	8.6	5.9
11	3.75	(3.8)	4.0	4.0	5.5	6.45	8.15	11.4	12.5	12.8	8.9	5.85
12	3.75	3.8	4.0	4.05	5.2	9.7	7.85	10.9	12.85	12.7	8.4	5.75
13	3.75	3.8	4.0	7.3	5.1	10.9	7.9	10.25	12.8	12.8	8.4	5.65
14	3.7	3.8	4.0	11.4	5.2	8.4	8.1	10.6	12.6	12.6	8.3	5.55
15	3.7	3.8	4.0	7.0	6.75	10.7	8.1	10.65	12.7	12.9	8.25	5.5
16	3.7	3.8	4.0	6.2	6.25	13.0	8.4	10.7	12.9	12.6	8.2	5.45
17	3.7	3.8	4.0	5.85	5.85	10.35	8.4	10.8	13.0	12.3	8.0	5.4
18	3.75	3.8	4.0	8.5	5.65	9.15	8.5	11.2	13.0	11.5	8.0	5.3
19	3.75	3.9	4.0	13.8	5.65	8.25	8.75	11.4	13.3	11.5	7.9	5.2
20	3.8	3.95	4.05	8.1	5.7	7.9	9.1	11.5	14.0	11.4	7.65	5.15
21	3.8	4.0	4.1	6.85	6.05	8.0	9.4	11.4	13.8	11.15	7.6	5.15
22	3.8	3.9	4.0	6.4	6.2	8.05	9.45	11.2	13.5	11.2	7.25	5.15
23	3.8	3.9	3.9	6.1	6.05	8.1	9.75	11.05	13.3	11.4	6.9	5.15
24	3.8	3.8	3.9	5.75	5.9	9.35	9.1	10.55	13.4	11.4	6.7	5.15
25	3.7	3.8	(3.9)	5.7	5.75	10.35	8.65	10.5	13.4	11.4	6.55	5.15
26	3.7	3.85	3.9	5.65	5.8	10.45	8.55	12.0	12.8	11.2	6.5	5.15
27	3.7	3.9	4.0	5.6	5.8	9.5	8.75	11.45	12.1	11.1	6.5	5.1
28	3.7	4.1	4.0	5.5	6.0	8.7	9.15	12.2	11.6	10.85	6.5	5.05
29	3.75	4.0	4.0	5.3	.....	8.25	8.5	11.6	11.7	10.55	6.45	5.05
30	3.75	(4.0)	4.0	5.2	.....	8.15	8.1	10.15	12.3	10.05	6.45	5.05
31	3.75	.....	3.9	5.15	.....	9.4	.....	9.95	.....	9.9	6.7	.....
1906–7.												
1	5.05	4.6	4.5	5.5	6.15	6.0	8.15	9.5	11.75	10.8	7.85	5.3
2	5.05	4.65	4.55	5.25	6.2	5.95	8.6	9.6	11.9	10.55	8.0	5.25
3	5.05	4.65	4.55	5.15	6.4	6.0	8.25	9.9	12.05	10.7	8.05	5.15
4	5.05	4.65	4.6	5.3	6.3	6.15	7.85	9.9	12.05	11.15	7.65	5.15
5	5.05	4.95	4.65	5.6	6.5	6.95	7.65	9.2	10.4	10.9	7.35	5.2
6	5.0	4.8	4.65	5.45	6.35	7.75	7.55	9.05	10.95	10.55	7.25	5.2
7	4.95	4.75	4.65	5.35	6.3	7.1	7.65	9.15	10.65	10.55	6.95	5.15
8	4.95	4.7	4.65	6.0	6.3	6.9	7.95	9.15	10.05	10.25	6.9	5.15
9	4.9	4.7	4.85	5.7	6.25	6.7	8.25	9.45	9.95	9.95	6.75	5.1
10	4.9	4.7	4.85	5.85	6.2	6.65	8.60	9.9	10.5	9.75	6.65	5.1
11	4.85	4.65	4.85	5.55	6.2	7.45	8.95	10.15	10.9	9.7	6.45	5.1
12	4.85	4.65	5.35	5.35	6.1	7.1	9.4	9.65	10.5	9.7	6.3	5.15
13	4.8	4.6	5.1	5.7	6.05	6.75	9.85	9.05	9.7	9.9	6.2	5.15
14	4.8	4.6	4.9	5.75	6.05	6.55	10.1	8.95	9.2	9.7	6.2	5.1
15	4.8	4.6	4.85	6.75	6.0	6.45	9.6	9.8	8.85	9.6	6.3	5.1

Daily gage height, in feet, of Kings River near Sanger, Cal., for 1895–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.												
16.	4.75	4.6	4.8	5.85	6.1	6.4	9.15	10.15	8.55	9.25	6.5	5.0
17.	4.75	4.6	4.8	5.85	6.5	8.65	9.2	10.15	8.55	9.15	6.65	4.95
18.	4.75	4.6	4.8	5.85	6.2	8.25	9.5	10.7	8.95	9.15	6.65	4.9
19.	4.75	4.6	4.75	5.55	6.0	8.55	9.75	11.2	9.7	9.2	6.5	4.9
20.	4.7	4.5	4.75	5.55	5.9	10.1	9.85	11.15	10.5	9.0	6.25	4.85
21.	4.7	4.5	4.75	5.6	6.0	10.3	9.95	11.0	10.95	8.75	6.25	4.8
22.	4.7	4.55	4.75	5.65	8.05	9.75	9.95	10.75	10.75	8.45	6.15	4.75
23.	4.65	4.55	4.75	5.65	7.1	8.7	10.05	9.9	10.3	8.45	6.0	4.75
24.	4.7	4.5	4.75	5.65	6.65	10.0	10.15	9.75	10.15	8.7	5.75	4.7
25.	4.65	4.5	4.85	5.75	6.5	10.3	10.15	10.0	10.2	8.85	5.65	4.7
26.	4.65	4.55	6.8	5.75	6.5	8.95	10.20	10.35	10.6	8.85	5.6	4.7
27.	4.65	4.55	6.3	5.6	6.3	8.2	10.25	10.3	10.85	8.6	5.6	4.7
28.	4.65	4.55	6.45	8.15	6.1	7.8	10.05	10.45	11.0	8.2	5.55	4.7
29.	4.65	4.55	5.7	8.1	.....	7.55	9.85	10.8	11.2	8.25	5.45	4.65
30.	4.6	4.55	5.35	6.8	.....	7.75	9.65	11.15	11.25	7.8	5.4	4.7
31.	4.6	.....	5.9	6.4	.....	8.05	.....	11.55	.....	7.55	5.35	.....
1907–8.												
1.	4.7	4.95	4.55	5.05	5.0	5.9	5.9	9.25	7.25	6.4	6.4	4.6
2.	4.65	4.9	4.5	4.95	5.0	5.9	5.85	9.05	7.15	6.45	7.15	4.6
3.	4.65	4.85	4.5	4.95	5.3	5.65	5.85	8.2	6.85	6.5	7.65	4.6
4.	4.65	4.85	4.5	4.95	5.8	5.55	5.9	7.7	6.6	6.55	6.75	4.6
5.	4.6	4.8	4.5	4.9	5.35	.....	5.9	7.6	6.6	6.6	6.8	4.6
6.	4.7	4.75	4.65	4.85	5.2	.....	6.0	7.9	6.65	6.6	6.4	4.65
7.	4.8	4.75	5.55	4.85	5.1	5.5	6.15	8.25	6.75	6.55	6.15	4.7
8.	4.8	4.75	5.4	4.85	5.1	5.45	6.05	7.8	7.15	6.45	5.85	4.85
9.	4.8	4.7	4.95	4.85	5.4	5.45	6.1	7.35	7.4	6.3	5.8	5.0
10.	4.75	4.7	4.9	4.85	5.55	5.5	6.15	7.0	7.55	6.2	5.8	4.85
11.	4.75	4.7	5.5	4.85	5.3	5.55	6.5	6.95	7.75	6.15	5.7	5.15
12.	4.75	4.65	5.1	4.85	5.2	5.65	7.25	7.0	7.85	6.2	5.55	5.3
13.	4.7	4.65	5.05	4.9	5.15	5.75	7.7	6.85	7.9	6.3	5.4	5.1
14.	4.65	4.65	5.0	5.0	5.2	6.0	7.95	6.75	7.85	6.2	5.3	4.95
15.	4.65	4.65	4.9	5.15	5.15	6.25	7.65	6.9	7.6	6.0	5.2	4.85
16.	4.65	4.65	4.95	5.0	5.1	6.65	7.55	6.85	7.55	5.85	5.1	4.75
17.	4.75	4.6	4.9	5.0	5.15	6.8	7.3	6.65	7.3	5.65	5.05	4.75
18.	4.8	4.7	4.85	5.0	5.1	6.75	7.6	6.7	7.0	5.6	5.0	4.75
19.	4.8	4.65	4.8	4.95	5.05	6.85	8.15	7.0	6.85	5.7	4.95	4.7
20.	4.8	4.65	4.85	4.9	5.1	6.85	8.25	6.95	6.6	5.7	4.95	4.7
21.	4.8	4.65	4.75	4.9	5.1	6.9	8.3	7.05	6.8	5.65	4.95	4.65
22.	4.8	4.65	4.75	4.9	5.2	6.8	7.85	7.2	6.75	5.65	4.95	4.65
23.	4.8	4.6	4.75	4.9	5.25	6.8	7.5	7.6	6.6	5.65	4.85	4.6
24.	4.85	4.6	4.75	5.45	5.15	6.8	7.3	8.05	6.65	5.65	4.85	4.9
25.	4.9	4.6	4.75	5.8	5.2	6.9	7.4	8.4	6.75	5.55	4.8	5.55
26.	4.85	4.6	4.75	5.6	5.4	6.8	7.85	8.25	6.8	5.5	4.8	5.6
27.	5.1	4.6	4.85	5.3	.....	6.45	8.35	7.95	6.75	5.5	4.75	5.3
28.	5.2	4.55	5.1	5.2	.....	6.2	8.95	7.85	6.6	5.65	4.75	5.15
29.	5.05	4.55	5.1	5.15	6.9	6.15	9.2	8.25	6.55	5.7	4.7	5.0
30.	5.0	4.55	5.0	5.1	.....	6.05	9.2	8.3	6.4	5.7	4.7	4.85
31.	5.05	.....	5.05	5.05	.....	5.9	.....	7.7	.....	5.7	4.65	.....
1908–9.												
1.	4.8	4.55	4.5	4.4	6.1	6.1	6.75	10.4	12.0	11.05	6.65	5.7
2.	4.75	4.5	4.5	4.55	6.05	6.1	7.15	10.7	12.55	11.5	6.45	5.55
3.	4.7	4.5	4.65	4.6	6.35	6.45	7.3	10.8	12.9	11.55	6.35	5.4
4.	4.65	4.5	4.65	4.6	6.5	6.85	7.4	10.95	13.0	11.15	6.3	5.3
5.	4.65	4.5	4.7	4.55	6.25	6.8	7.2	11.1	12.95	10.45	6.25	5.3
6.	4.65	4.5	4.75	5.1	6.45	6.85	7.0	11.2	12.5	9.85	6.25	5.45
7.	4.65	4.5	4.65	5.6	7.6	7.1	7.05	11.3	12.05	9.3	6.25	5.4
8.	4.6	4.45	4.6	5.7	7.35	6.9	7.2	11.0	11.65	9.1	6.25	5.3
9.	4.55	4.45	4.6	5.95	6.7	6.7	7.4	11.1	11.6	9.0	6.35	5.25
10.	4.55	4.45	4.6	5.55	6.8	6.5	7.65	11.0	11.65	8.95	6.3	5.25
11.	4.5	4.45	4.55	5.1	9.75	6.4	7.3	10.5	11.7	9.0	6.2	5.2
12.	4.5	4.45	4.5	5.25	10.5	6.25	7.15	10.0	11.85	9.35	6.1	5.1
13.	4.5	4.45	4.45	9.5	9.8	6.25	7.5	9.5	11.8	9.5	6.05	5.05
14.	4.45	4.4	4.45	12.9	8.6	6.25	8.1	9.35	11.7	9.55	6.0	5.0
15.	4.45	4.4	4.5	9.8	7.9	6.35	8.6	9.6	11.7	9.25	5.8	4.9
16.	4.7	4.4	4.45	7.75	7.65	6.15	9.0	9.75	11.65	9.0	5.65	4.85
17.	4.85	4.4	4.45	7.05	7.45	6.45	9.4	9.9	11.3	8.9	5.7	4.8
18.	4.85	4.4	4.45	6.6	7.25	6.5	9.6	10.1	10.75	8.45	5.75	4.8
19.	4.75	4.4	4.4	6.35	7.05	6.45	9.4	10.15	10.2	7.9	6.0	4.8
20.	4.75	4.4	4.4	6.2	6.85	6.45	8.7	10.55	10.15	7.7	6.15	4.8

Daily gage height, in feet, of Kings River near Sanger, Cal., for 1895–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908–9.												
21	4.7	4.35	4.45	11.35	6.95	6.6	8.5	10.8	10.75	7.6	6.0	4.75
22	4.7	4.4	4.45	10.2	6.75	6.6	8.3	10.3	11.15	7.5	5.9	4.75
23	4.7	4.5	4.45	8.25	6.5	6.7	8.3	9.85	11.65	7.55	5.85	4.7
24	4.7	4.65	4.4	7.45	6.4	6.45	8.45	9.5	11.8	7.75	5.7	4.7
25	4.7	4.6	4.4	7.25	6.3	6.4	8.75	9.75	11.7	8.0	5.6	4.7
26	4.7	4.6	4.4	6.85	6.2	6.5	9.2	10.4	11.3	7.8	5.5	4.7
27	4.7	4.6	4.4	6.85	6.2	6.55	9.7	10.95	11.15	7.6	5.45	4.7
28	4.65	4.5	4.4	6.65	6.15	6.45	9.75	10.65	11.25	7.3	5.4	4.7
29	4.65	4.5	4.4	6.4	.....	6.85	9.5	9.9	11.05	7.1	5.5	4.7
30	4.65	4.5	4.4	6.3	.....	6.75	9.9	10.10	10.95	6.95	5.7	4.7
31	4.6	.....	4.4	6.3	.....	6.65	.....	11.3*	.....	6.8	5.8	.....
1909–10.												
1	4.7	4.5	5.6	11.85	6.2	6.0	6.9	9.2	10.15	6.5	5.25	4.4
2	4.75	4.5	5.6	8.8	6.0	6.3	7.1	9.1	9.9	6.4	5.2	4.4
3	4.95	4.5	5.6	7.8	5.95	6.5	7.25	9.35	9.4	6.25	5.1	4.4
4	4.9	4.5	5.7	7.2	6.0	6.7	7.5	8.9	9.15	6.05	5.05	4.45
5	4.85	4.5	5.7	6.8	6.0	6.85	7.9	8.55	8.95	5.8	5.0	4.4
6	4.85	4.5	5.5	6.55	5.9	6.95	7.65	8.6	8.6	5.7	4.95	4.4
7	4.8	4.5	7.2	6.3	5.85	7.0	7.55	9.2	8.3	5.8	4.9	4.35
8	4.8	4.5	7.1	6.15	5.75	7.1	7.95	9.7	8.05	5.95	4.85	4.35
9	4.85	4.75	10.4	6.1	5.7	7.3	8.4	9.9	7.95	6.05	4.8	4.3
10	4.7	5.0	.....	6.1	5.7	7.3	8.65	9.75	8.05	6.05	4.75	4.3
11	4.7	4.7	.....	6.0	5.7	7.3	8.6	9.85	8.3	6.05	4.7	4.3
12	4.7	.....	.....	5.9	5.7	7.35	8.15	9.95	8.2	6.05	4.65	4.3
13	4.7	.....	.....	5.9	5.8	7.4	8.05	10.15	7.95	6.0	4.55	4.3
14	4.7	.....	.....	6.05	5.85	7.5	8.35	10.2	7.85	6.0	4.5	4.3
15	4.7	4.9	.....	6.6	5.85	7.2	8.6	10.25	7.5	5.9	4.5	4.65
16	4.7	4.8	.....	9.2	5.7	6.9	8.95	10.2	7.1	5.75	4.5	5.0
17	4.6	4.9	.....	7.95	5.7	7.0	9.25	9.7	7.2	5.6	4.5	4.75
18	4.55	4.9	.....	7.4	5.7	7.5	9.45	9.5	7.2	6.8	4.5	4.6
19	4.55	4.9	.....	7.1	5.7	7.9	9.7	9.55	7.0	7.15	4.5	4.5
20	4.55	4.9	.....	6.95	5.7	7.9	9.9	9.6	6.9	6.8	4.5	4.4
21	4.55	5.85	5.5	6.95	5.6	7.55	9.7	9.5	6.9	6.4	4.55	4.35
22	4.55	6.15	.....	6.9	5.6	7.55	9.85	9.75	6.7	6.15	4.55	4.3
23	4.55	5.5	5.35	6.7	5.6	7.4	10.1	9.85	6.65	5.8	4.6	4.3
24	4.5	5.3	5.33	6.5	5.6	7.15	10.25	9.9	6.6	5.7	4.6	4.25
25	4.5	5.65	5.3	6.45	5.65	7.0	10.4	9.75	6.7	5.6	4.6	4.25
26	4.5	6.2	5.25	6.3	5.7	6.75	10.5	9.6	6.8	5.5	4.55	4.25
27	4.5	5.6	5.2	6.1	5.7	6.7	10.25	9.95	6.85	5.5	4.5	4.25
28	4.45	5.5	5.2	6.05	5.8	6.55	9.6	10.0	6.9	5.6	4.45	4.25
29	4.4	5.5	5.15	6.0	.....	6.55	9.5	10.05	6.8	5.5	4.45	4.3
30	4.4	.....	5.15	6.05	.....	6.6	9.4	10.15	6.65	5.4	4.45	4.3
31	4.45	.....	8.7	6.1	.....	6.7	.....	10.2	.....	5.3	4.4	.....
1910–11.												
1	4.2	4.35	4.3	4.3	10.4	5.8	8.65	8.95	9.45	10.65	7.3	5.15
2	4.2	4.35	4.3	4.25	9.35	5.9	8.75	9.0	9.7	10.8	7.2	5.1
3	4.2	4.3	4.3	4.25	8.65	6.2	8.9	9.4	10.45	10.95	7.05	5.1
4	4.2	4.3	4.65	4.3	8.6	8.35	8.65	9.9	11,15	10.95	6.85	5.1
5	4.15	4.3	4.5	4.3	7.85	7.75	9.15	10.45	11.45	10.95	6.8	5.05
6	4.15	4.3	4.45	4.3	7.35	7.25	9.5	9.75	11.75	10.85	6.75	5.0
7	4.15	4.3	4.45	4.3	7.05	8.6	8.95	9.8	11.35	10.95	6.6	4.95
8	4.15	4.3	4.45	4.3	6.75	11.65	8.6	10.0	11.25	10.85	6.5	4.9
9	4.1	4.25	4.45	4.3	6.5	9.9	8.5	10.05	11.35	10.5	6.4	4.85
10	4.1	4.25	4.45	6.15	6.35	10.7	8.4	9.8	11.7	10.5	6.35	4.85
11	4.1	4.25	5.3	5.2	6.3	9.4	8.1	9.85	12.15	10.1	6.25	4.85
12	4.4	4.25	5.15	4.85	6.35	8.7	7.95	10.15	12.4	10.2	6.15	4.8
13	4.35	4.3	4.75	5.2	6.4	8.3	7.8	10.25	12.5	10.2	6.1	4.75
14	4.3	4.35	4.65	5.1	7.05	7.95	7.65	10.1	12.05	10.25	5.95	4.75
15	4.3	4.3	4.55	5.6	6.55	8.85	7.6	9.6	12.1	10.35	5.9	4.7
16	4.55	4.3	4.5	5.35	6.3	7.7	7.8	9.3	12.35	10.1	5.8	4.65
17	4.6	4.3	4.5	4.95	6.1	7.65	7.95	9.35	12.5	11.1	5.75	4.65
18	4.6	4.3	4.4	4.9	6.0	7.65	8.15	9.7	12.65	10.6	5.7	4.65
19	4.7	4.35	4.45	4.85	6.0	7.7	8.55	10.4	12.35	10.5	5.7	4.65
20	4.65	4.3	4.45	4.85	6.1	7.65	8.7	10.8	12.05	9.85	5.65	4.6
21	4.6	4.35	4.5	6.55	6.0	7.7	8.65	11.0	12.1	9.4	5.6	4.6
22	4.6	4.35	4.5	5.9	5.95	7.6	8.8	11.4	11.75	9.1	5.6	4.9
23	4.55	4.35	4.5.	5.5	5.95	7.55	9.15	11.85	11.5	8.9	5.5	5.6
24	4.55	4.35	4.5	7.75	5.95	7.6	9.45	11.6	10.95	8.7	5.5	5.2
25	4.5	4.35	4.5	9.35	5.85	7.65	9.65	10.8	10.75	8.5	5.4	5.05
26	4.45	4.35	4.5	7.5	5.75	7.7	9.8	10.15	11.2	8.25	5.4	4.95
27	4.45	4.3	4.45	6.35	5.85	7.75	9.5	10.05	11.55	8.0	5.3	4.85
28	4.4	4.3	4.35	6.0	5.8	7.85	9.15	10.3	11.55	7.85	5.3	4.75
29	4.4	4.3	4.35	10.25	.....	7.95	8.85	10.15	11.25	7.65	5.25	4.75
30	4.35	4.3	4.35	12.7	.....	8.1	8.8	9.9	10.95	7.55	5.2	5.1
31	4.35	.....	4.35	13.7	.....	8.35	.....	9.65	.....	7.35	5.15	.....

Daily gage height, in feet, of Kings River near Sanger, Cal., for 1895–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	5.1	4.45	4.4	4.43	4.62	4.48	5.09	6.2	(11.0)
2	5.0	4.45	4.4	4.45	4.60	4.48	5.30	6.2	(11.2)
3	4.9	4.45	4.4	4.43	4.59	4.45	5.46	6.05	(11.3)
4	4.85	4.45	4.45	4.39	4.57	4.52	5.49	6.05	(11.5)
5	4.8	4.4	4.45	4.43	.....	4.76	5.56	6.25	11.1
6	4.75	4.4	4.45	4.45	.....	5.24	5.50	6.2	11.1
7	4.75	4.4	4.55	4.45	.....	5.26	5.63	6.25	10.9
8	4.7	4.4	4.55	4.60	.....	5.08	5.80	6.25	10.4
9	4.65	4.4	4.5	4.48	.....	4.96	5.92	6.6	9.6
10	4.7	4.5	4.45	4.52	.....	5.03	6.15	6.8	9.0
11	4.7	4.85	4.45	4.71	4.55	5.05	6.4	7.5	8.9
12	4.65	4.5	4.4	4.65	4.57	5.02	5.95	7.95	9.0
13	4.6	4.55	4.35	4.60	4.55	5.33	5.76	7.95	8.5
14	4.6	4.6	4.35	4.58	4.56	5.18	(5.70)	8.4	8.6
15	4.55	4.55	4.35	4.60	4.58	5.10	5.77	8.8	8.7
16	4.55	4.6	4.35	4.62	4.53	5.13	5.84	9.0	8.7
17	4.55	4.6	4.4	4.60	4.54	5.05	5.81	9.4	8.6
18	4.5	4.55	4.4	4.54	4.56	5.01	5.82	9.6	8.4
19	4.5	4.55	4.35	4.52	4.58	5.06	(5.70)	9.5	8.3
20	4.5	4.55	4.35	4.52	4.57	5.08	5.54	8.8	8.4
21	4.5	4.55	4.4	4.52	4.55	5.08	5.41	8.3	8.0
22	4.45	4.5	4.3	4.52	4.55	5.07	5.45	7.8	7.3
23	4.45	4.5	4.35	4.52	4.51	5.03	5.53	7.8	6.85
24	4.45	4.45	4.4	4.52	4.53	5.06	5.82	8.2	6.5
25	4.45	4.45	4.3	4.52	4.45	5.14	5.80	(8.4)	6.4
26	4.45	4.45	4.25	(4.6)	4.42	5.12	5.80	(8.0)	6.5
27	4.45	4.45	4.25	(4.8)	4.42	5.16	5.86	(8.2)	6.6
28	4.45	4.45	4.5	4.68	4.47	5.10	5.90	(9.4)	6.65
29	4.45	4.4	4.5	4.62	4.47	5.20	6.05	(10.4)	6.6
30	4.45	4.4	4.4	4.64	.....	5.23	6.05	(11.6)	6.4
31	4.45	.....	4.35	4.63	.....	5.07	.....	(10.6)	.....

NOTE.—Gage heights in parentheses are estimated.

Rating tables for Kings River near Sanger, Cal.

Jan. 1 to Dec. 31, 1896.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
3.50	220	4.80	728	6.20	1,672	8.80	7,020
3.60	250	4.90	774	6.40	1,844	9.00	7,700
3.70	280	5.00	820	6.60	2,064	9.20	8,500
3.80	310	5.10	884	6.80	2,332	9.40	9,300
3.90	350	5.20	948	7.00	2,600	9.60	10,140
4.00	390	5.30	1,012	7.20	2,936	9.80	11.020
4.10	430	5.40	1,076	7.40	3,272	10.00	11,900
4.20	470	5.50	1,140	7.60	3,672	10.50	14,300
4.30	510	5.60	1,212	7.80	4,136	11.00	16,800
4.40	550	5.70	1,284	8.00	4,600	11.50	19,450
4.50	590	5.80	1,356	8.20	5,160	12.00	22,100
4.60	636	5.90	1,428	8.40	5,720		
4.70	682	6.00	1,500	8.60	6,340		

Jan. 1 to Dec. 31, 1897.

4.00	320	5.10	844	7.20	2,808	9.40	7,136
4.10	360	5.20	908	7.40	3,096	9.60	7,716
4.20	400	5.40	1,036	7.60	3,400	9.80	8,348
4.30	440	5.60	1,170	7.80	3,720	10.00	8,980
4.40	480	5.80	1,310	8.00	4,040	10.50	10,980
4.50	520	6.00	1,450	8.20	4,408	11.00	13,520
4.60	572	6.20	1,642	8.40	4,776	11.50	16,720
4.70	624	6.40	1,834	8.60	5,184	12.00	20,060
4.80	676	6.60	2,048	8.80	5,632	12.50	23,400
4.90	728	6.80	2,284	9.00	6,080		
5.00	780	70.00	2,520	9.20	6,608		

Rating tables for Kings River near Sanger, Cal.—Continued.

Jan. 1, 1898, to Dec. 31, 1900.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
3.60	180	5.00	780	6.50	1,930	9.50	7,300
3.80	250	5.20	908	7.00	2,450	10.00	8,800
4.00	320	5.40	1,036	7.50	3,120	11.00	11,800
4.20	400	5.00	1,170	8.00	3,920	12.00	14,800
4.40	480	5.60	1,310	8.50	4,870	13.00	17,800
4.60	572	5.80	1,450	9.00	6,000	14.00	20,800
4.80	676	6.00					

Jan. 1, 1901, to Dec. 31, 1902.

9.00	6,000	9.80	8,220	10.40	10,400	11.00	13,240
9.20	6,520	10.00	8,900	10.60	11,300	11.50	16,040
9.40	7,040	10.20	9,610	10.80	12,250	12.00	19,230
9.60	7,600						

NOTE.—Below gage height 9 the table for 1901–2 is the same as the table for 1898–1900.

Jan. 1 to Dec. 31, 1903.

3.70	160	4.70	610	6.40	1,830	8.40	4,680
3.80	180	4.80	670	6.60	2,030	8.60	5,090
3.90	210	4.90	730	6.80	2,230	8.80	5,540
4.00	240	5.00	790	7.00	2,450	9.00	6,030
4.10	280	5.20	910	7.20	2,700	9.50	7,300
4.20	330	5.40	1,035	7.40	2,980	10.00	8,900
4.30	380	5.60	1,170	7.60	3,270	10.50	10,840
4.40	430	5.80	1,310	7.80	3,580	11.00	13,240
4.50	490	6.00	1,470	8.00	3,910	11.50	16,040
4.60	550	6.20	1,640	8.20	4,280		

Jan. 1 to Dec. 31, 1904.

3.70	130	5.00	740	6.30	1,730	8.00	3,900
3.80	165	5.10	805	6.40	1,820	8.20	4,280
3.90	200	5.20	870	6.50	1,920	8.40	4,700
4.00	240	5.30	940	6.60	2,020	8.60	5,140
4.10	280	5.40	1,010	6.70	2,120	8.80	5,600
4.20	325	5.50	1,085	6.80	2,230	9.00	6,080
4.30	370	5.60	1,160	6.90	2,340	9.50	7,460
4.40	420	5.70	1,235	7.00	2,460	10.00	9,100
4.50	470	5.80	1,310	7.20	2,700	10.50	11,150
4.60	520	5.90	1,390	7.40	2,960	11.00	13,500
4.70	570	6.00	1,470	7.60	3,240	11.50	16,300
4.80	625	6.10	1,550	7.80	3,560	12.00	19,300
4.90	680	6.20	1,640				

Jan. 1 to Dec. 31, 1905.

3.70	150	5.00	740	6.30	1,730	8.00	3,850
3.80	175	5.10	805	6.40	1,820	8.20	4,190
3.90	205	5.20	870	6.50	1,920	8.40	4,570
4.00	240	5.30	940	6.60	2,020	8.60	4,980
4.10	280	5.40	1,010	6.70	2,120	8.80	5,425
4.20	325	5.50	1,085	6.80	2,230	9.00	5,890
4.30	370	5.60	1,160	6.90	2,340	9.20	6,380
4.40	420	5.70	1,235	7.00	2,460	9.40	6,915
4.50	470	5.80	1,310	7.20	2,705	9.60	7,495
4.60	520	5.90	1,390	7.40	2,965	9.80	8,115
4.70	570	6.00	1,470	7.60	3,240	10.00	8,770
4.80	625	6.10	1,550	7.80	3,535	10.20	9,450
4.90	680	6.20	1,640				

NOTE.—This table is based on discharge measurements made during 1895–1905. It is well defined throughout.

Rating tables for Kings River near Sanger, Cal.—Continued.

Jan. 1 to June 30, 1906.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
3.90	205	5.20	870	6.50	1,920	8.60	4,980
4.00	240	5.30	940	6.60	2,020	8.80	5,410
4.10	280	5.40	1,010	6.70	2,120	9.00	5,860
4.20	325	5.50	1,085	6.80	2,230	9.20	6,330
4.30	370	5.60	1,160	6.90	2,340	9.40	6,840
4.40	420	5.70	1,235	7.00	2,460	9.60	7,360
4.50	470	5.80	1,310	7.20	2,705	9.80	7,900
4.60	520	5.90	1,390	7.40	2,965	10.00	8,470
4.70	570	6.00	1,470	7.60	3,240	11.00	11,700
4.80	625	6.10	1,550	7.80	3,535	12.00	15,900
4.90	680	6.20	1,640	8.00	3,850	13.00	21,040
5.00	740	6.30	1,730	8.20	4,190	14.00	26,600
5.10	805	6.40	1,820	8.40	4,570		

NOTE.—This table is based on discharge measurements made during 1895–1906 and is well defined.

July 1 to Dec. 31, 1906.

4.50	330	5.00	645	5.40	950	5.80	1,280
4.60	385	5.10	720	5.50	1,030	5.90	1,370
4.70	445	5.20	795	5.60	1,110	6.00	1,460
4.80	510	5.30	870	5.70	1,190	6.10	1,550
4.90	575						

NOTE.—This table is based on three discharge measurements made during 1906 and is well defined. Above gage height 6.1 feet it is the same as the previous table.

Jan. 1 to Dec. 31, 1907.

4.50	265	5.90	1,300	7.30	2,950	9.40	7,300
4.60	315	6.00	1,390	7.40	3,110	9.60	7,830
4.70	370	6.10	1,480	7.50	3,270	9.80	8,380
4.80	430	6.20	1,570	7.60	3,430	10.00	8,940
4.90	495	6.30	1,670	7.70	3,600	10.20	9,510
5.00	565	6.40	1,770	7.80	3,770	10.40	10,110
5.10	640	6.50	1,880	7.90	3,950	10.60	10,710
5.20	720	6.60	1,990	8.00	4,140	10.80	11,330
5.30	800	6.70	2,110	8.20	4,540	11.00	11,980
5.40	880	6.80	2,230	8.40	4,960	11.40	13,310
5.50	960	6.90	2,360	8.60	5,400	12.00	15,460
5.60	1,040	7.00	2,500	8.80	5,840		
5.70	1,120	7.10	2,650	9.00	6,300		
5.80	1,210	7.20	2,800	9.20	6,790		

NOTE.—This table is not applicable for obstructed-channel conditions. It is based on six discharge measurements made during 1907, and previous measurements, and is well defined.

Jan. 1 to Dec. 31, 1908.

4.30	250	5.40	920	6.50	2,000	7.60	3,450
4.40	280	5.50	1,000	6.60	2,110	7.70	3,610
4.50	320	5.60	1,090	6.70	2,230	7.80	3,780
4.60	370	5.70	1,180	6.80	2,350	7.90	3,960
4.70	430	5.80	1,280	6.90	2,480	8.00	4,150
4.80	490	5.90	1,380	7.00	2,610	8.20	4,540
4.90	550	6.00	1,480	7.10	2,740	8.40	4,960
5.00	620	6.10	1,580	7.20	2,880	8.60	5,400
5.10	690	6.20	1,680	7.30	3,020	8.80	5,840
5.20	760	6.30	1,780	7.40	3,160	9.00	6,300
5.30	840	6.40	1,890	7.50	3,300	9.20	6,790

NOTE.—This table is not applicable for obstructed-channel conditions. It is based on eight discharge measurements made during 1908 and is well defined.

Daily discharge, in second-feet, of Kings River near Sanger, Cal., for 1909–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	280	1,580	1,580	2,290	9,750	15,400	11,800	2,170	1,180
2	345	1,530	1,580	2,810	10,700	18,000	13,400	1,940	1,040
3	370	1,840	1,940	3,020	11,000	19,800	13,600	1,840	920
4	370	2,000	2,420	3,160	11,500	20,300	12,100	1,780	840
5	345	1,730	2,350	2,880	12,000	20,000	9,900	1,730	840
6	690	1,940	2,420	2,610	12,300	17,700	8,220	1,730	960
7	1,090	3,450	2,740	2,680	12,600	15,600	6,850	1,730	920
8	1,180	3,090	2,480	2,880	11,600	14,000	6,380	1,730	840
9	1,430	2,230	2,230	3,160	12,000	13,800	6,150	1,840	800
10	1,040	2,350	2,000	3,530	11,600	14,000	6,040	1,780	800
11	690	7,960	1,890	3,020	10,000	14,200	6,150	1,680	760
12	800	10,000	1,730	2,810	8,620	14,800	6,970	1,580	690
13	7,330	8,090	1,730	3,300	7,330	14,600	7,330	1,530	655
14	19,800	5,290	1,730	4,300	6,970	14,200	7,460	1,480	620
15	8,090	3,940	1,840	5,290	7,580	14,200	6,730	1,280	550
16	3,690	3,530	2,000	6,150	7,960	14,000	6,150	1,140	520
17	2,680	3,230	1,940	7,090	8,350	12,600	5,930	1,180	490
18	2,110	2,950	2,000	7,580	8,890	18,000	4,980	1,230	490
19	1,840	2,680	1,940	7,090	9,030	9,170	3,940	1,480	490
20	1,680	2,420	1,940	5,500	10,200	9,030	3,610	1,630	490
21	12,800	2,540	2,110	5,080	11,000	10,800	3,450	1,480	460
22	9,170	2,290	2,110	4,680	9,460	12,100	3,300	1,380	460
23	4,580	2,000	2,230	4,680	8,220	14,000	3,380	1,330	430
24	3,230	1,890	1,940	4,980	7,330	14,600	3,690	1,180	430
25	2,950	1,780	1,890	5,600	7,960	14,200	4,120	1,090	430
26	2,420	1,680	2,000	6,610	9,750	12,600	3,770	1,000	430
27	2,420	1,680	2,060	7,830	11,500	12,100	3,450	960	430
28	2,170	1,630	1,940	7,960	10,500	12,500	3,020	920	430
29	1,890	.....	2,420	7,330	8,350	11,800	2,740	1,000	430
30	1,780	.....	2,290	8,350	8,890	11,500	2,540	1,180	430
31	1,780	.....	2,170	.....	12,600	.....	2,350	1,280	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
1	430	320	1,090	14,700	1,750	1,550	2,530	6,370	8,740	2,080	888	348
2	460	320	1,090	5,510	1,550	1,860	2,770	6,150	8,070	1,970	851	348
3	585	320	1,090	3,730	1,500	2,080	2,960	6,720	6,830	1,800	778	348
4	550	320	1,180	2,900	1,550	2,300	3,300	5,720	6,260	1,600	743	375
5	520	320	1,180	2,410	1,550	2,470	3,880	5,010	5,820	1,360	708	348
6	520	320	1,000	2,140	1,450	2,590	3,510	5,110	5,110	1,270	675	348
7	490	320	2,880	1,860	1,410	2,650	3,370	6,370	4,540	1,360	642	322
8	490	320	2,740	1,700	1,310	2,770	3,960	7,560	4,110	1,500	610	322
9	520	460	9,750	1,650	1,270	3,030	4,720	8,070	3,960	1,600	578	296
10	430	620	2,610	1,650	1,270	3,030	5,210	7,680	4,110	1,600	548	296
11	430	430	2,000	1,550	1,270	3,030	5,110	7,940	4,540	1,600	517	296
12	430	460	2,480	1,450	1,270	3,100	4,280	8,200	4,360	1,600	488	296
13	430	490	2,230	1,450	1,360	3,160	4,110	8,740	3,960	1,550	430	296
14	430	520	1,890	1,600	1,410	3,300	4,630	8,880	3,800	1,550	402	296
15	430	550	1,580	2,190	1,410	2,900	5,110	9,020	3,300	1,450	402	488
16	430	490	1,480	6,370	1,270	2,530	5,820	8,880	2,770	1,310	402	708
17	370	550	1,380	3,960	1,270	2,650	6,480	7,560	2,900	1,180	402	548
18	345	550	1,280	3,160	1,270	3,300	6,950	7,070	2,900	2,410	402	458
19	345	550	1,180	2,770	1,270	3,880	7,560	7,190	2,650	2,840	402	402
20	345	550	1,090	2,590	1,270	3,880	8,070	7,310	2,530	2,410	402	348
21	345	1,330	1,000	2,590	1,180	3,370	7,560	7,070	2,530	1,970	430	322
22	345	1,630	940	2,530	1,180	3,370	7,940	7,680	2,300	1,700	430	296
23	345	1,000	880	2,300	1,180	3,160	8,610	7,940	2,240	1,360	458	296
24	320	840	840	2,080	1,180	2,840	9,020	8,070	2,190	1,270	458	270
25	320	1,140	840	2,020	1,220	2,650	9,450	7,680	2,300	1,180	458	270
26	320	1,680	800	1,860	1,270	2,360	9,750	7,310	2,410	1,090	430	270
27	320	1,090	760	1,650	1,270	2,300	9,020	8,200	2,470	1,090	402	270
28	300	1,000	760	1,600	1,360	2,140	7,310	8,340	2,530	1,180	375	270
29	280	1,000	720	1,550	.....	2,140	7,070	8,480	2,410	1,090	375	296
30	280	1,040	720	1,600	.....	2,190	6,830	8,740	2,240	1,010	375	296
31	300	.....	5,500	1,650	.....	2,300	.....	8,880	.....	926	348	.....

Daily discharge, in second-feet, of Kings River near Sanger, Cal., for 1909–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	245	322	296	296	9,030	1,360	5,140	5,700	6,730	9,720	3,030	814
2	245	322	296	270	6,520	1,450	5,320	5,800	7,290	10,200	2,900	778
3	245	296	296	270	5,140	1,750	5,610	6,620	9,160	10,600	2,710	778
4	245	296	488	296	5,050	4,600	5,140	7,760	11,200	10,600	2,470	778
5	220	296	402	296	3,800	3,660	6,100	9,160	12,200	10,600	2,410	743
6	220	296	375	296	3,100	2,960	6,840	7,400	13,200	10,300	2,360	708
7	220	296	375	296	2,710	5,050	5,700	7,520	11,900	10,600	2,190	675
8	220	296	375	296	2,360	12,800	5,050	8,000	11,500	10,300	2,080	642
9	196	270	375	296	2,080	7,760	4,870	8,120	11,900	9,300	1,970	610
10	196	270	375	1,700	1,920	9,860	4,690	7,520	13,000	9,300	1,920	610
11	196	270	926	851	1,860	6,620	4,190	7,640	14,600	8,250	1,800	610
12	348	270	814	610	1,920	5,230	3,960	8,380	15,500	8,500	1,700	578
13	322	296	548	851	1,970	4,520	3,730	8,630	15,800	8,500	1,650	548
14	296	322	488	778	2,710	3,960	3,510	8,250	14,200	8,630	1,500	548
15	296	296	430	1,180	2,140	5,520	3,440	7,060	14,400	8,900	1,450	517
16	430	296	402	966	1,860	3,580	3,730	6,410	15,300	8,250	1,360	488
17	458	296	402	675	1,650	3,510	3,960	6,520	15,800	11,100	1,310	488
18	458	296	348	642	1,550	3,510	4,270	7,290	16,400	9,580	1,270	488
19	517	322	375	610	1,550	3,580	4,960	9,030	15,300	9,300	1,270	488
20	488	296	375	610	1,650	3,510	5,230	10,200	14,200	7,640	1,220	458
21	458	322	402	2,140	1,550	3,580	5,140	10,800	14,400	6,620	1,180	458
22	458	322	402	1,450	1,500	3,440	5,420	12,000	13,200	6,000	1,180	642
23	430	322	402	1,090	1,500	3,370	6,100	13,500	12,400	5,610	1,090	1,180
24	430	322	402	3,660	1,500	3,440	6,730	12,700	10,600	5,230	1,090	851
25	402	322	402	6,520	1,410	3,510	7,180	10,200	10,000	4,870	1,010	743
26	375	322	402	3,300	1,310	3,580	7,520	8,380	11,400	4,440	1,010	675
27	375	296	375	1,920	1,410	3,660	6,840	8,120	12,500	4,030	926	610
28	348	296	322	1,550	1,360	3,800	6,100	8,760	12,500	3,800	926	548
29	348	296	322	8,630	.....	3,960	5,520	8,380	11,500	3,510	888	548
30	322	296	322	16,600	.....	4,190	5,420	7,760	10,600	3,370	851	778
31	322	.....	322	20,500	.....	4,600	.....	7,180	.....	3,100	814	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	778	375	348	325	426	350	714	1,680	10,500
2	708	375	348	335	415	350	865	1,680	11,100
3	642	375	348	325	410	335	988	1,530	11,400
4	610	375	375	305	398	371	1,010	1,530	12,000
5	578	348	375	325	398	506	1,070	1,730	10,800
6	548	348	375	335	396	820	1,020	1,680	10,800
7	548	348	430	335	394	835	1,140	1,730	10,200
8	517	348	430	415	392	707	1,290	1,730	8,840
9	488	348	402	350	390	629	1,400	2,110	6,940
10	517	402	375	371	388	674	1,630	2,350	5,700
11	517	610	375	476	388	688	1,890	3,220	5,510
12	488	402	348	442	398	668	1,430	3,860	5,700
13	458	430	322	415	388	888	1,250	3,860	4,770
14	458	458	322	404	393	776	1,200	4,600	4,950
15	430	430	322	415	404	720	1,260	5,320	5,130
16	430	458	322	426	376	741	1,330	5,700	5,130
17	430	458	348	415	382	688	1,300	6,510	4,950
18	402	430	348	382	393	662	1,310	6,940	4,600
19	402	430	322	371	404	694	1,200	6,720	4,430
20	402	430	322	371	398	707	1,060	5,320	4,600
21	402	430	348	371	388	707	948	4,430	3,940
22	375	402	296	371	388	700	980	3,640	2,960
23	375	402	322	371	366	674	1,050	3,640	2,410
24	375	375	348	371	376	694	1,310	4,260	2,000
25	375	375	296	371	335	748	1,290	4,600	1,890
26	375	375	270	415	320	734	1,290	3,940	2,000
27	375	375	270	530	320	762	1,340	4,260	2,110
28	375	375	402	459	345	720	1,380	6,510	2,170
29	375	348	402	426	345	790	1,530	8,840	2,110
30	375	348	348	437	.....	812	1,530	12,400	1,890
31	375	.....	322	432	.....	700	.....	9,360	.....

NOTE.—Daily discharge determined from well defined rating curves applicable as follows: Jan. 1 to Dec. 31, 1909; Jan. 1 to Dec. 31, 1910; Jan. 1 to Dec. 31, 1911, and Jan. 1 to June 30, 1912. Discharge interpolated Feb. 4–10, 1912.

Monthly discharge of Kings River near Sanger, Cal., for 1895–1912.

[Drainage area, 1,740 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1895.							
September	3,920	360	778	0.45	0.50	46,294	
1895–96.							
October	520	320	371	0.21	0.24	22,812	
November	1,834	250	368	.21	.23	21,898	
December	520	250	328	.19	.22	20,168	
January	11,020	390	1,474	.85	.98	90,682	
February	1,140	728	825	.47	.51	47,477	
March	7,020	820	1,710	.98	1.13	105,181	
April	4,600	820	1,938	1.11	1.24	115,349	
May	22,100	1,140	5,918	3.40	3.90	363,890	
June	18,920	5,160	12,737	7.31	8.15	757,922	
July	6,680	1,212	3,742	2.15	2.48	230,110	
August	1,212	590	795	.45	.52	48,938	
September	590	390	491	.28	.31	29,234	
The year	22,100	250	2,560	1.48	19.91	1,850,000	
1896–97.							
October	510	310	350	0.20	0.23	21,520	
November	1,076	390	538	.31	.35	32,043	
December	550	470	466	.27	.31	28,659	
January	624	360	437	.25	.29	26,870	
February	6,344	1,100	1,631	.92	.96	90,581	
March	4,408	1,240	1,884	1.06	1.22	115,843	
April	9,380	1,930	5,318	2.99	3.33	316,442	
May	22,732	6,344	14,470	8.15	9.40	889,731	
June	10,580	2,520	6,145	3.45	3.87	365,652	
July	4,040	1,036	2,177	1.22	1.41	133,859	
August	1,100	440	739	.42	.47	45,440	
September	480	250	329	.18	.20	19,577	
The year	22,732	250	2,870	1.65	22.04	2,090,000	
1897–98.							
October	572	270	394	0.22	0.25	24,226	
November	2,520	360	692	.39	.44	41,177	
December	8,348	572	985	.55	.63	60,566	
January	624	440	506	.29	.33	31,113	
February	1,170	480	705	.40	.41	39,154	
March	1,170	520	895	.50	.58	55,032	
April	7,820	1,036	3,547	2.00	2.23	211,061	
May	6,520	2,450	3,536	1.99	2.29	217,422	
June	3,280	1,310	2,122	1.20	1.34	126,267	
July	1,310	440	696	.39	.45	42,796	
August	400	215	320	.18	.21	19,676	
September	780	145	204	.12	.13	12,139	
The year	8,348	145	1,220	.70	9.29	881,000	
1898–99.							
October	728	215	320	0.18	0.21	19,676	
November	285	215	231	.13	.14	13,745	
December	1,450	180	315	.18	.21	19,369	
January	1,310	250	513	.29	.33	31,543	
February	1,036	440	660	.37	.39	36,655	
March	20,200	624	2,165	1.22	1.41	133,122	
April	7,300	1,834	4,512	2.54	2.83	268,482	
May	4,870	1,450	3,568	2.01	2.32	219,389	
June	10,320	2,584	6,077	3.42	3.82	356,845	
July	2,852	676	1,411	.79	.92	86,760	
August	624	250	411	.23	.26	25,272	
September	285	180	215	.12	.13	12,793	
The year	20,200	180	1,700	.977	12.97	1,220,000	
1899–1900.							
October	1,205	180	378	0.21	0.24	23,242	
November	1,240	345	638	.36	.40	37,964	
December	5,096	400	991	.56	.64	60,935	
January	12,700	849	1,689	.97	1.12	103,853	
February	849	676	748	.43	.45	41,542	
March	2,584	728	1,712	.98	1.13	105,267	

Monthly discharge of Kings River near Sanger, Cal., for 1895–1912—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1899–1900.							
April	2,852	1,546	2,098	1.20	1.34	124,840	
May	9,400	1,930	5,881	3.38	3.90	361,609	
June	7,900	2,986	5,127	2.94	3.27	305,078	
July	2,584	572	1,278	.73	.84	78,581	
August	624	250	398	.23	.26	24,472	
September	520	215	301	.17	.19	17,911	
The year	12,700	180	1,770	1.02	13.78	1,290,000	
1900–1901.							
October	440	215	309	.18	.21	19,000	
November	15,700	250	1,310	.75	.83	77,950	
December	972	572	726	.42	.48	44,640	
January	43,930	520	4,337	2.49	2.87	266,672	
February	7,040	1,040	3,318	1.90	2.00	190,392	
March	4,490	2,034	2,965	1.70	1.96	182,311	
April	10,840	1,642	4,492	2.58	2.87	267,293	
May	21,830	5,548	11,093	6.37	7.36	682,082	
June	21,180	7,040	14,363	8.25	9.20	854,658	
July	13,240	3,280	6,258	3.59	4.14	384,789	
August	6,260	728	2,292	1.32	1.52	140,930	
September	780	440	534	.31	.35	31,775	
The year	43,930	215	4,330	2.49	33.79	3,140,000	
1901–2.							
October	2,034	360	535	0.31	0.36	32,896	
November	1,450	480	694	.40	.45	41,296	
December	1,170	440	667	.38	.44	41,073	
January	520	360	440	.25	.29	27,055	
February	2,852	360	665	.38	.40	36,932	
March	4,490	1,040	1,420	.82	.95	87,312	
April	26,380	1,450	4,163	2.39	2.67	247,716	
May	13,760	3,440	6,532	3.75	4.32	401,637	
June	13,240	3,760	8,063	4.63	5.16	479,782	
July	3,600	1,040	1,638	.94	1.08	100,717	
August	910	320	626	.36	.42	38,491	
September	360	250	304	.17	.19	18,089	
The year	26,380	250	2,145	1.23	16.73	1,550,000	
1902–3.							
October	520	215	265	0.15	0.17	16,294	
November	1,170	250	451	.26	.29	26,836	
December	1,040	400	497	.29	.33	30,559	
January	13,240	240	930	.53	.61	57,183	
February	1,470	790	930	.53	.55	51,650	
March	4,280	790	1,470	.84	.97	86,513	
April	6,030	2,030	3,287	1.89	2.11	195,590	
May	17,290	4,680	9,546	5.48	6.32	586,961	
June	12,250	4,880	7,876	4.52	5.04	468,655	
July	4,680	910	1,948	1.12	1.29	119,778	
August	910	280	560	.32	.37	34,433	
September	330	160	224	.13	.14	13,329	
The year	17,290	160	2,330	1.34	18.19	1,690,000	
1903–4.							
October	280	160	195	0.11	0.13	11,990	
November	430	160	227	.13	.14	13,507	
December	430	180	203	.12	.14	12,482	
January	240	130	183	.11	.13	11,252	
February	2,340	200	618	.36	.39	35,548	
March	8,080	940	2,166	1.24	1.43	133,182	
April	5,960	2,175	3,549	2.04	2.28	211,180	
May	15,700	2,700	10,376	96	6.87	637,995	
June	14,550	3,320	7,563	4.34	4.84	450,030	
July	3,170	1,198	1,957	1.12	1.29	120,331	
August	1,870	495	1,041	.60	.69	64,008	
September	3,100	280	702	.40	.45	41,772	
The year	15,700	130	2,400	1.38	18.78	1,740,000	

Monthly discharge of Kings River near Sanger, Cal., for 1895–1912—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1904–5.							
October	3,990	975	1,901	1.09	1.26	116,888	
November	975	420	620	.36	.40	36,893	
December	520	302	354	.20	.23	21,767	
January	625	325	447	.257	.30	27,480	
February	1,235	652	899	.516	.54	49,930	
March	2,900	1,085	1,844	1.06	1.22	113,400	
April	6,010	1,685	2,731	1.57	1.75	162,500	
May	9,622	2,965	5,887	3.38	3.90	361,600	
June	9,795	3,770	6,448	3.70	4.13	383,700	
July	3,535	772	1,859	1.07	1.23	114,300	
August	710	280	448	.257	.30	27,550	
September	280	150	198	.114	.13	11,780	
The year	9,795	150	1,970	1.13	15.39	1,430,000	
1905–6.							
October	260	150	174	0.100	0.12	10,700	
November	280	175	191	.110	.12	11,360	
December	302	205	246	.141	.16	15,130	
January	25,500	205	2,360	1.36	1.57	144,000	
February	2,150	792	1,150	.661	.69	63,900	
March	21,000	1,220	5,240	3.01	3.47	322,000	
April	7,760	2,960	4,720	2.71	3.02	281,000	
May	16,800	3,930	10,700	6.15	7.09	658,000	
June	26,600	8,320	17,100	9.83	11.00	1,020,000	
July	22,400	8,180	16,300	9.37	10.80	1,000,000	
August	7,900	1,870	4,300	2.47	2.85	264,000	
September	2,020	682	1,120	.644	.72	66,600	
The year	26,600	150	5,300	3.05	41.61	3,260,000	
1906–7.							
October	682	385	516	0.297	0.34	31,700	
November	610	330	397	.228	.25	23,600	
December	2,230	330	700	.402	.46	43,000	
January	4,440	680	1,360	.782	.90	83,600	A.
February	4,240	1,300	1,740	1.00	1.04	96,600	A.
March	9,810	1,340	4,110	2.36	2.72	253,000	A.
April	9,660	3,350	7,000	4.02	4.48	417,000	A.
May	13,800	6,180	9,200	5.29	6.10	566,000	A.
June	15,600	5,290	10,400	5.98	6.67	619,000	A.
July	12,500	3,350	7,560	4.34	5.00	465,000	A.
August	4,240	840	1,970	1.13	1.30	121,000	A.
September	800	342	554	.318	.35	33,000	A.
The year	15,600	330	3,790	2.18	29.61	2,750,000	
1907–8.							
October	720	315	435	0.250	0.29	26,700	A.
November	530	290	363	.209	.23	21,600	A.
December	1,000	265	502	.289	.33	30,900	A.
January	1,280	520	650	.374	.43	40,000	A.
February	2,480	620	897	.516	.56	51,600	A.
March	2,480	960	1,670	.960	1.11	103,000	A.
April	6,790	1,330	3,210	1.84	2.05	191,000	A.
May	6,920	2,170	3,580	2.06	2.38	220,000	A.
June	3,960	1,890	2,680	1.54	1.72	159,000	A.
July	2,110	1,000	1,480	.851	.98	91,000	A.
August	3,530	400	1,080	.621	.72	66,400	A.
September	1,090	370	550	.316	.35	32,700	A.
The year	6,920	265	1,425	.819	11.14	1,030,000	
1908–9.							
October	520	300	405	0.233	0.27	24,900	A.
November	400	265	312	.179	.20	18,600	A.
December	460	280	323	.186	.21	19,900	A.
January	19,800	280	3,260	1.87	2.16	200,000	A.
February	10,000	1,530	3,120	1.79	1.86	173,000	A.
March	2,740	1,580	2,050	1.18	1.36	126,000	A.
April	8,350	2,290	4,810	2.76	3.08	286,000	A.
May	12,600	6,970	9,860	5.66	6.52	606,000	A.
June	20,300	9,030	14,300	8.22	9.17	851,000	A.
July	13,600	2,350	6,110	3.51	4.05	376,000	A.
August	2,170	920	1,460	.839	.97	89,800	A.
September	1,180	430	642	.369	.41	38,200	A.
The year	20,300	265	3,890	2.23	30.26	2,810,000	

Monthly discharge of Kings River near Sanger, Cal., for 1895–1912—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1909–10.							
October	585	280	402	0.231	0.27	24,700	A.
November	1,680	320	684	.393	.44	40,700	A.
December	9,750	720	1,770	1.02	1.18	109,000	A.
January	14,700	1,450	2,800	1.61	1.86	172,000	A.
February	1,750	1,180	1,340	.77	.80	74,400	A.
March	3,880	1,550	2,740	1.57	1.81	168,000	A.
April	9,750	2,530	5,900	3.39	3.78	351,000	A.
May	9,020	5,010	7,550	4.34	5.00	464,000	A.
June	8,740	2,190	3,830	2.20	2.45	228,000	A.
July	2,840	926	1,550	.891	1.03	95,300	A.
August	880	348	510	.293	.34	31,400	B.
September	708	270	345	.198	.22	20,500	B.
The year	14,700	270	2,450	1.41	19.18	1,780,000	
1910–11.							
October	517	196	333	0.191	0.22	20,500	B.
November	322	270	301	.173	.19	17,900	B.
December	926	296	414	.238	.27	25,500	B.
January	20,500	270	2,560	1.47	1.70	157,000	A.
February	9,300	1,310	2,580	1.48	1.54	143,000	A.
March	12,800	1,360	4,380	2.52	2.90	269,000	A.
April	7,520	3,440	5,250	3.02	3.37	312,000	A.
May	13,500	5,700	8,410	4.83	5.57	517,000	A.
June	16,400	6,730	12,600	7.24	8.08	750,000	A.
July	11,100	3,100	7,770	4.47	5.15	478,000	A.
August	3,030	814	1,600	.920	1.06	98,400	A.
September	1,180	458	646	.371	.41	38,400	A.
The year	20,500	196	3,900	2.24	30.46	2,830,000	
1911–12.							
October	778	375	468	0.269	0.31	28,800	A.
November	610	348	399	.229	.26	23,700	B.
December	430	270	348	.200	.23	21,400	B.
January	530	305	390	.224	.26	24,000	B.
February	426	320	383	.220	.24	22,000	B.
March	888	335	673	.387	.45	41,400	A.
April	1,890	714	1,230	.707	.79	73,200	A.
May	12,400	1,530	4,380	2.52	2.90	269,000	A.
June	12,000	1,890	5,720	3.29	3.67	340,000	A.
The period						844,000	

NOTE.—During the years of 1895, 1897–1899, a drainage area of 1,775 square miles was used. The values for those years have not been recomputed.

KINGS RIVER AT SLATE POINT,[1] CAL.

The following information regarding records of discharge of Kings River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

Many discharge measurements were made of Kings River at a number of points between Slate Point, 5 miles above Centerville (Kings River post office), where the river leaves the mountains, and Tulare Lake, about 65 miles below. The character of the channel of this stream at all available locations near the mountains or in the canyon did not admit of first-class observations. Thus, at Slate

[1] Slate Point is located about 3 miles above the intake of the Fresno canal and about 1½ miles above the intake of the Fresno and Kings River canal, in sec. 18, T. 13 S., R. 24 E., Mount Diablo base and meridian.

Point, the upper station, where discharge measurements were made and the gage rod established, the discharge was affected in varying amounts by the alternate formation and washing away of bars of cobble stones and gravel immediately below. At the railroad bridge crossing south of Kingsburg [1] a good gage-height record has been kept for the entire period, and its results, with those of the discharge measurements, have afforded the data for what is believed to be a fair approximation of the actual water quantities which passed that point.[2] Between Kingsburg and the mountains a number of canals take from the river a quantity of water which at ordinary stages constitutes a large part of the total flow. These canals were repeatedly measured and gage records kept or observations made of their flow during one or more seasons, so that the total quantity diverted from the river is approximately known. This quantity has been added to the discharge determined at the Kingsburg bridge to determine the discharge delivered by the river into the valley at Slate Point. The methods employed throughout have been similar to those used for the San Joaquin.

Monthly discharge of Kings River at Slate Point, Cal. for 1878–1884.

[Drainage area, 1,742 square miles.]

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.				
November	300	0.17	0.19	17,851
December	290	.17	.20	17,831
January	370	.21	.24	22,750
February	870	.50	.52	48,317
March	1,970	1.13	1.30	121,131
April	4,750	2.73	3.05	282,645
May	5,090	2.92	3.37	312,972
June	3,760	2.16	2.41	223,736
July	1,650	.95	1.10	101,455
August	380	.22	.25	23,365
September	270	.15	.17	16,066
October	280	.16	.18	17,217
The year	1,670	.957	12.98	1,210,000
1879–80.				
November	400	.23	.26	23,802
December	1,440	.83	.96	88,542
January	720	.41	.47	44,271
February	1,040	.60	.65	59,821
March	1,120	.64	.74	68,866
April	5,230	3.00	3.35	311,207
May	7,120	4.09	4.71	437,792
June	9,540	5.48	6.12	567,669
July	4,800	2.76	3.18	295,141
August	1,150	.66	.76	70,711
September	370	.21	.23	22,017
October	220	.13	.15	13,527
The year	2,760	1.59	21.58	2,000,000

[1] See also Kings River near Kingsburg, p. 177.
[2] See also discussion of accuracy of records at this point, pp. 35–42.

Monthly discharge of Kings River at Slate Point, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1880–81.				
November	220	0.13	0.15	13,091
December	510	.29	.33	31,359
January	870	.50	.58	53,494
February	2,430	1.39	1.45	134,955
March	1,900	1.09	1.26	116,826
April	5,800	3.33	3.71	345,124
May	8,220	4.72	5.44	505,428
June	5,010	2.88	3.21	298,116
July	4,790	2.75	3.17	294,526
August	650	.37	.43	39,967
September	340	.20	.22	20,231
October	250	.14	.16	15,372
The year	2,580	1.48	20.11	1,870,000
1881–82.				
November	230	.13	.15	13,686
December	260	.15	.17	15,987
January	380	.22	.25	23,365
February	440	.25	.26	24,436
March	1,250	.72	.83	76,859
April	3,170	1.82	2.03	188,628
May	9,190	5.28	6.08	565,071
June	6,410	3.68	4.11	381,421
July	2,020	1.16	1.34	124,205
August	620	.36	.42	38,122
September	390	.22	.25	23,207
October	610	.35	.40	37,507
The year	2,080	1.20	16.29	1,510,000
1882–83.				
November	470	.27	.30	27,967
December	340	.20	.23	20,906
January	320	.18	.21	19,676
February	340	.20	.21	18,883
March	1,050	.60	.69	64,562
April	2,220	1.27	1.42	132,099
May	6,760	3.85	4.44	411,967
June	6,730	3.86	4.31	400,463
July	1,460	.84	.97	89,772
August	600	.34	.39	36,893
September	480	.28	.31	28,562
October	420	.24	.28	25,825
The year	1,760	1.01	13.76	1,280,000
1883–84.				
November	260	.15	.17	15,471
December	220	.13	.15	13,527
January	430	.25	.29	26,440
February	2,620	1.50	1.62	150,704
March	3,610	2.07	2.39	221,970
April	3,370	1.93	2.15	200,529
May	9,210	5.29	6.09	566,301
June	17,630	10.12	11.29	1,049,058
July	13,210	7.58	8.74	812,251
August	3,570	2.05	2.36	219,511
September	880	.51	.57	52,364
October	900	.52	.60	55,339
The year	4,660	2.68	36.42	3,380,000

KINGS RIVER AT KINGSBURG, CAL.

This station was established in 1879 by the State engineer, at the Southern Pacific Railroad bridge, 1 mile south of Kingsburg. No meter measurements have been made since 1898 except a low-

water measurement in 1902, because it was found impossible to construct a satisfactory rating table, on account of the changes in gage heights caused by the raising and lowering of the head gate of the Peoples canal, which takes water from Kings River, a few miles below the gaging station, and the changes in river channel.

The gage is a vertical plank fastened to a bridge pier. It is at the same bridge and probably at the same datum as the one used by the State Engineering Department of California, 1878–1884.

Above this station the following canals are taken out:

	Capacity in second-feet.
Fresno	1,500
Seventy-six	600
Fowler Switch	600
Kingsburg	600
	3,300

The water is deep and the current slow.

The station was considered of interest and importance, owing to the extensive litigation over the waters of the stream, the principal diversions from it occurring above the gaging station, and also to the fact that return water from the San Joaquin Valley is beginning to manifest itself in the increased volume of this river between the upper and lower diversions.

The channel of the stream at this station is badly broken by the piers of the railroad bridge and of a wagon bridge immediately below. Because the section is so poor at this point, measurements of discharge during 1898 were made at a point known as "Clarks Bridge," which is approximately 2 miles above the railroad bridge and crosses with a single span. The water at Clarks Bridge is deep and in the low stages of the stream it has a very slow velocity. During the summer of 1898 this velocity was so slow that the meter would not act, consequently the stream was gaged by wading at a point a short distance above the railroad bridge. The measurements that were taken at the Kingsburg railroad bridge, at Clarks Bridge, and at the intermediate station where they were made by wading, were all referred to the Kingsburg gage.

Daily gage heights have been furnished through the courtesy of the Southern Pacific Co.

The estimates of discharge published below for 1896–97 are subject to considerable error. It is believed, however, that much of the discrepancy in the monthly means for Sanger and Kingsburg stations for these years is to be explained by the large diversions between them.

Discharge measurements of Kings River at Kingsburg, Cal., 1895–1902.

Date.	Hydrographer.	Gage height.	Discharge.
1895.		*Feet.*	*Sec.-feet.*
Jan. 10	A. P. Davis	6.0	1,830
Mar. 23[a]	J. B. Lippincott	4.1	500
Dec. 2[a]	....do	3.3	326
1896.			
Apr. 11	J. A. Vogleson	5.7	1,883
1897.			
Feb. 11	J. B. Lippincott	5.58	905
Apr. 6	.....do	5.2	825
June 3	.....do	8.6	[b]5,959
July 17	A. Q. Campbell	5.02	503
Sept. 10	.....do	3.2	221
Nov. 3	.....do	4.84	465
Dec. 23	J. B. Lippincott	4.8	522
1898.			
Apr. 21	J. B. Lippincott	6.6	1,658
May 28	.....do	6.2	1,026
July 26	.....do	3.9	305
Aug. 30	.....do	3.4	94
1902.			
Sept. 26	L. M. Lawson	[c]1.5	117

[a] Measurements made with floats. [b] Estimated. [c] Observer's gage reading.

Daily gage height, in feet, of Kings River at Kingsburg, Cal., for 1891–1904.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891.									
1	3.50	2.20	10.50	3.90	8.65	7.10	9.50	5.10	3.00
2	3.50	2.20	9.40	4.00	9.20	6.80	9.40	5.00	3.00
3	3.20	2.20	7.10	4.20	9.10	7.20	9.10	5.00	3.00
4	3.20	2.20	6.80	4.30	9.40	8.00	8.90	4.80	3.00
5	3.10	2.10	5.20	4.50	9.80	9.30	8.20	4.70	3.00
6	3.30	2.10	4.70	4.60	10.00	10.30	7.90	4.30	3.00
7	3.30	2.10	3.80	4.80	9.70	10.50	7.90	4.10	3.00
8	3.20	2.10	3.20	5.00	9.70	10.20	7.00	4.00	3.00
9	3.10	2.00	3.00	7.60	8.80	10.00	6.60	3.90	3.00
10	3.00	2.00	2.90	4.40	9.50	10.00	6.70	3.80	3.00
11	2.80	2.00	2.80	4.40	9.30	9.70	6.50	3.80	3.00
12	2.70	2.00	3.00	4.60	9.40	9.00	6.30	3.60	3.00
13	2.50	2.00	3.00	4.50	9.40	8.00	6.30	3.60	3.00
14	2.50	2.00	3.00	4.40	9.10	7.90	6.20	3.40	3.00
15	2.60	2.00	3.10	4.40	8.10	10.00	6.10	3.40	3.00
16	2.60	2.90	3.10	4.40	7.70	9.80	6.50	3.30	3.00
17	2.60	4.70	3.10	5.10	8.10	10.10	6.60	3.40	3.00
18	2.60	3.90	3.00	5.50	9.30	10.00	6.20	3.50	3.00
19	2.60	3.20	3.10	5.00	9.00	9.60	6.20	3.50	3.00
20	2.50	2.90	3.00	5.00	9.00	9.70	6.10	3.40	3.00
21	5.40	2.70	3.20	5.00	9.70	9.80	6.10	3.20	3.00
22	2.30	2.90	3.80	5.50	9.50	9.80	5.60	3.20	3.00
23	2.30	10.20	4.10	5.20	7.50	9.30	5.50	3.10	3.00
24	2.30	7.20	3.80	7.20	7.00	9.30	5.40	3.10	3.00
25	2.30	6.60	3.80	6.80	7.80	9.10	5.40	3.00	3.30
26	2.20	5.20	3.70	6.50	8.00	9.30	5.40	3.00	3.30
27	2.20	4.70	4.00	6.80	8.85	9.70	5.60	3.10	3.20
28	2.20	5.00	4.60	7.35	9.10	10.10	5.60	3.00	3.10
29	2.20	.....	4.40	7.80	9.10	9.80	5.60	3.10	3.00
30	2.20	.....	4.10	8.30	8.30	9.50	5.30	3.30	3.00
31	2.20	.....	4.00	.....	8.10	.....	5.20	3.20	.....

Daily gage height, in feet, of Kings River at Kingsburg, Cal., for 1891–1904—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891–92.												
1	3.00	2.80	2.70	5.20	3.00	2.50	4.20	5.40	9.60	6.00	1.11	2.60
2	3.00	2.80	2.60	4.20	2.50	2.90	4.50	4.70	9.60	5.20	2.00	2.60
3	3.00	2.80	2.60	3.90	2.20	3.40	4.20	4.70	9.10	4.80	2.00	2.60
4	3.00	2.80	2.60	3.70	2.20	3.50	4.60	4.70	7.80	4.40	2.00	2.60
5	3.00	2.80	2.50	3.50	2.30	3.20	4.10	4.20	7.70	4.30	2.00	2.70
6	3.30	2.80	2.50	3.50	2.50	3.10	3.80	4.00	7.50	4.10	2.00	2.60
7	3.30	2.80	2.40	4.30	2.50	3.00	3.80	4.00	7.20	3.60	1.11	2.60
8	3.20	2.80	2.40	4.20	2.50	3.10	4.50	3.70	6.60	3.30	1.11	2.60
9	3.20	2.80	2.50	4.20	2.20	3.10	5.40	3.60	6.10	3.10	1.11	2.50
10	3.10	2.80	2.50	3.30	2.20	3.30	5.60	4.20	5.80	2.90	1.11	2.50
11	3.10	2.80	2.60	3.10	2.10	3.70	5.70	5.20	5.50	2.80	1.11	2.50
12	3.00	2.80	2.60	3.00	2.10	3.90	5.60	5.40	5.10	2.70	1.11	2.50
13	3.00	2.80	2.60	3.00	2.10	3.90	5.30	5.40	4.80	2.40	1.11	2.50
14	3.20	2.80	2.60	3.00	2.40	3.80	5.10	4.90	4.70	2.30	1.11	2.50
15	3.20	2.80	2.80	2.70	2.40	3.90	5.10	5.30	4.80	2.20	1.11	2.50
16	3.20	2.80	2.80	2.70	2.40	4.10	5.10	6.60	4.50	2.10	1.11	2.50
17	3.20	2.80	2.70	2.70	2.30	3.80	5.20	6.00	5.60	2.10	1.11	2.50
18	3.20	2.80	2.70	2.60	2.30	3.50	4.80	6.70	6.70	2.10	1.11	2.50
19	3.20	2.80	2.60	2.60	2.30	3.30	4.20	8.10	7.20	2.00	1.11	2.50
20	3.10	2.70	2.60	2.60	2.40	3.70	4.00	8.90	7.50	1.90	1.11	2.50
21	3.10	2.70	2.60	2.60	2.70	3.30	3.80	9.50	7.60	1.90	1.11	2.50
22	3.00	2.70	2.60	2.60	2.80	3.00	3.90	9.80	7.20	1.90	1.11	2.50
23	3.00	2.70	2.60	2.60	2.60	2.90	3.90	9.20	6.60	1.90	1.11	2.40
24	3.00	2.70	2.50	2.60	2.50	3.00	4.60	9.30	6.20	1.90	2.20	2.40
25	3.00	2.70	2.50	2.60	2.45	2.80	4.50	9.00	5.60	1.90	2.20	2.40
26	3.00	2.70	2.50	2.60	2.30	2.70	4.40	8.60	5.60	1.80	2.20	2.30
27	2.90	2.70	2.50	2.60	2.25	2.80	4.50	8.50	5.50	2.60	2.20	2.40
28	2.90	2.70	2.70	2.60	2.30	2.70	4.30	8.70	6.20	2.70	2.10	2.40
29	2.80	2.70	2.80	2.60	2.40	2.70	4.50	9.30	6.80	2.60	2.10	2.60
30	2.80	2.70	4.10	2.80	.....	2.80	4.80	9.30	6.80	2.60	2.10	2.70
31	2.80	.....	8.60	2.90	.....	5.70	.....	9.30	.....	2.10	2.35	.....
1892–93.												
1	2.70	2.40	3.80	4.50	7.50	4.50	6.50	5.00	10.33	9.33	4.17	2.33
2	2.70	2.50	4.10	4.33	6.33	4.42	6.67	5.25	10.92	9.50	4.17	2.25
3	2.70	2.50	3.90	4.08	5.83	4.33	6.33	5.33	11.67	9.50	4.17	2.17
4	2.70	2.50	3.70	4.17	5.50	4.17	6.25	6.00	12.08	9.08	4.17	2.50
5	2.70	2.50	4.00	3.83	6.25	4.75	6.17	6.83	12.33	8.83	4.08	3.33
6	2.60	2.40	3.30	3.83	6.00	4.83	6.17	6.83	12.08	8.50	4.00	2.83
7	2.50	2.40	2.10	3.83	5.33	4.58	6.08	7.33	11.92	8.33	4.00	2.58
8	2.50	2.40	2.80	3.75	5.17	4.33	5.50	7.92	11.50	8.17	3.75	2.50
9	2.50	2.40	2.70	3.67	9.83	6.17	5.08	7.75	11.58	8.50	3.75	2.50
10	2.70	2.40	2.60	3.83	11.50	5.25	5.17	8.75	11.75	8.00	3.50	2.50
11	2.70	2.40	2.60	3.83	8.17	4.83	5.25	9.33	12.00	7.17	3.33	2.33
12	2.70	2.40	2.60	4.00	7.00	5.83	5.00	9.92	11.83	6.83	3.42	2.25
13	2.60	2.40	2.50	3.67	6.83	5.75	4.83	10.25	10.42	6.67	3.33	2.17
14	2.50	2.40	2.50	3.67	6.17	5.25	4.67	10.75	9.75	6.33	3.42	2.08
15	2.50	2.40	2.40	3.33	6.08	5.67	5.00	11.00	10.00	5.75	3.42	2.08
16	2.50	2.40	2.40	3.17	5.67	5.67	5.00	10.83	10.50	6.08	3.17	2.08
17	2.40	2.40	3.40	5.00	5.58	5.33	5.00	10.58	10.67	6.08	3.00	2.08
18	2.50	2.40	2.40	4.33	5.42	5.08	5.08	9.58	10.75	6.17	2.83	2.50
19	2.50	2.40	2.30	4.00	5.25	5.00	5.17	8.83	10.17	6.00	2.83	2.50
20	2.60	2.40	2.30	3.58	5.25	6.17	5.25	8.75	9.75	6.00	2.67	2.58
21	2.60	2.40	2.30	3.50	5.25	11.75	5.75	8.58	9.58	6.00	2.58	2.67
22	2.60	2.40	2.30	3.25	5.17	8.33	5.83	8.58	9.75	6.00	2.42	2.67
23	2.50	2.40	2.30	3.92	5.17	7.17	6.00	9.00	9.50	5.67	2.33	3.67
24	2.50	2.40	2.30	3.83	5.17	6.25	5.58	9.75	9.17	5.67	2.33	2.50
25	2.50	2.40	11.90	3.83	5.00	6.00	5.17	9.25	9.17	5.67	2.25	2.50
26	2.50	2.40	8.00	3.83	5.08	6.42	5.00	8.75	9.08	5.75	2.25	2.50
27	2.20	2.50	6.70	4.00	5.00	6.58	5.00	8.83	9.00	5.75	2.25	2.42
28	2.30	2.50	5.90	6.25	4.00	6.75	5.33	9.08	9.00	5.00	2.42	2.42
29	2.30	2.60	5.40	5.00	.....	6.92	5.00	9.50	8.92	4.33	2.42	2.33
30	2.40	4.30	5.00	4.75	.....	6.75	4.67	9.75	9.00	4.25	2.50	2.25
31	2.40	.....	4.80	11.25	.....	6.50	.....	10.08	.....	4.17	2.50	.....
1893–94.												
1	2.33	2.67	2.33	2.50	2.00	3.25	4.83	5.25	6.83	2.33	2.75	2.75
2	2.50	2.58	2.17	2.50	1.92	3.33	5.08	5.42	6.25	2.33	2.67	2.50
3	2.33	2.58	2.17	3.33	1.92	4.08	5.42	5.58	5.83	5.00	2.67	2.33
4	2.25	2.58	2.17	3.17	1.92	4.17	5.42	5.83	5.92	4.75	2.67	2.25
5	2.33	2.67	2.17	2.83	1.92	2.92	5.42	6.75	6.00	4.58	2.67	2.17

Daily gage height, in feet, of Kings River at Kingsburg, Cal., for 1891–1904—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1893–94.												
6	2.25	2.92	2.08	2.50	1.92	2.83	5.33	7.00	6.00	4.58	2.67	2.17
7	2.25	2.75	2.08	2.50	1.92	3.90	5.42	7.83	5.75	4.42	2.50	2.17
8	2.17	2.67	2.08	2.25	1.92	2.83	5.67	8.67	5.25	4.50	2.42	2.17
9	2.17	2.92	2.08	2.00	2.00	2.58	5.92	9.00	5.08	4.33	2.42	2.12
10	2.17	2.50	2.08	1.92	2.67	2.75	6.08	9.00	5.25	3.83	2.33	2.12
11	2.25	2.00	2.08	1.92	4.33	2.83	6.58	8.75	5.25	3.58	2.33	2.08
12	2.25	2.00	2.08	1.83	4.00	2.83	6.33	8.42	5.08	3.75	2.25	2.00
13	2.25	2.00	2.08	1.92	3.83	3.25	6.00	7.50	4.75	3.25	2.25	2.00
14	2.25	1.92	2.08	1.92	3.58	3.58	5.92	7.25	4.50	3.00	2.17	2.00
15	2.25	1.92	2.08	1.92	3.33	3.83	6.25	7.42	4.58	2.83	2.17	2.00
16	2.25	1.92	2.08	3.00	2.75	4.00	5.83	6.92	4.75	2.50	2.17	1.96
17	2.25	1.92	2.08	4.67	4.50	4.83	5.58	6.92	4.75	2.50	2.17	1.96
18	2.25	1.92	2.08	4.00	3.50	4.75	5.00	6.50	4.75	2.50	2.12	1.96
19	2.33	1.92	2.08	4.17	3.08	4.33	5.00	6.17	4.75	2.25	2.12	1.92
20	2.50	2.25	2.08	3.92	3.33	4.58	5.33	6.07	4.58	2.58	2.08	1.00
21	2.50	2.33	.....	3.83	5.92	3.92	5.50	6.00	4.33	2.67	2.08	2.08
22	2.50	2.50	2.08	4.33	5.83	3.75	5.58	5.83	4.33	2.67	2.08	2.17
23	2.42	2.33	2.17	3.00	4.58	3.50	5.50	6.17	4.50	2.75	2.08	2.33
24	2.42	2.00	3.50	2.50	4.00	3.08	5.17	7.17	4.33	2.67	2.08	2.33
25	2.33	2.08	3.25	2.25	3.58	3.33	5.42	8.00	4.42	5.83	2.08	2.25
26	2.33	2.17	3.17	2.17	3.33	3.83	6.00	7.75	4.33	2.92	2.00	2.29
27	2.33	2.33	2.67	2.08	3.17	4.33	5.67	6.83	4.25	3.00	2.00	2.33
28	2.67	2.25	2.58	2.00	3.08	4.58	5.25	6.42	4.08	2.92	2.00	2.42
29	2.50	2.33	2.58	2.00	.....	4.58	4.92	6.17	4.17	2.83	2.00	2.42
30	2.67	2.58	2.50	1.92	.....	4.83	4.83	6.17	4.25	2.83	2.17	2.58
31	2.58	.....	2.50	1.92	.....	4.83	.....	7.00	.....	2.75	2.83	.....
1894–95.												
1	2.67	2.92	3.25	5.08	5.25	5.58	5.58	6.33	7.17	7.25	4.08	3.00
2	3.33	2.92	3.17	5.00	5.25	5.58	5.58	8.50	6.83	7.08	4.00	3.00
3	3.25	2.92	3.08	4.75	5.25	5.67	5.75	7.83	7.17	7.08	4.00	3.00
4	3.58	2.92	3.00	4.67	5.25	5.50	5.75	7.08	8.25	6.75	4.00	3.00
5	4.00	2.92	3.00	10.33	5.17	5.42	5.75	7.42	9.17	6.42	4.17	2.92
6	4.17	2.87	3.17	6.50	5.17	5.33	5.50	8.25	9.75	6.33	4.00	2.92
7	4.12	2.83	4.25	6.00	5.08	5.25	5.42	8.83	10.00	6.33	4.00	2.92
8	4.00	2.83	4.75	5.75	5.08	5.25	5.67	9.33	10.00	6.33	3.92	2.83
9	3.75	2.75	4.92	5.92	5.08	5.33	5.83	9.75	9.67	6.50	3.83	2.83
10	3.67	2.67	4.58	5.83	5.50	5.25	5.75	9.75	9.58	6.50	3.67	2.83
11	3.58	2.62	4.83	5.50	5.25	5.25	5.83	9.75	9.58	6.33	3.50	2.75
12	3.50	2.62	4.58	5.33	7.00	5.17	5.75	10.25	9.58	5.92	3.17	2.83
13	3.33	2.67	4.33	5.33	9.17	5.00	5.83	10.50	9.75	5.83	3.08	2.83
14	3.25	2.75	4.33	5.50	7.00	5.42	6.00	10.92	9.25	5.75	3.42	7.17
15	3.17	2.75	4.42	6.00	6.50	5.08	5.75	11.25	8.75	5.50	3.33	5.50
16	3.08	2.58	4.33	5.83	6.17	4.92	5.50	11.42	8.33	5.50	3.25	4.83
17	2.92	2.33	4.33	6.50	6.08	4.83	5.75	11.25	7.83	5.50	3.33	4.33
18	2.67	2.58	4.17	7.00	6.00	4.92	6.25	11.00	8.00	5.50	3.50	4.17
19	2.67	2.58	4.17	7.50	5.92	4.50	6.83	10.50	8.08	5.58	3.50	3.75
20	2.92	2.58	5.92	6.67	6.00	4.25	7.25	10.25	8.75	5.50	3.50	3.67
21	3.00	2.67	6.08	6.25	5.92	4.75	7.50	10.00	8.58	5.17	3.42	3.50
22	3.25	2.67	5.17	6.17	5.83	4.25	7.25	9.83	8.33	5.00	3.42	3.33
23	3.33	2.67	5.17	6.17	6.17	4.25	7.25	9.75	8.50	4.92	3.33	3.25
24	3.50	2.75	5.17	6.25	5.92	4.08	7.17	9.58	8.75	4.83	3.25	3.25
25	3.42	2.75	4.67	6.00	6.17	4.25	7.00	9.75	8.83	4.83	3.25	3.17
26	3.50	2.75	4.33	5.83	5.83	4.50	7.25	9.83	8.75	4.83	3.17	3.17
27	3.33	2.92	4.33	5.75	5.75	4.50	7.08	9.00	8.83	4.83	3.17	3.08
28	3.17	2.92	4.83	5.58	5.58	7.25	7.00	8.33	7.92	4.75	3.08	3.08
29	3.17	2.96	5.17	5.50	.....	7.83	7.00	7.75	7.50	4.50	3.08	3.00
30	3.08	2.96	6.33	5.33	.....	6.33	6.33	7.25	7.50	4.25	3.08	3.00
31	3.00	.....	5.67	.....	.....	5.92	.....	7.50	.....	4.17	.....	.....
1895–96.												
1	3.17	3.83	3.58	2.20	5.20	4.10	4.30	4.00	10.30	6.50	3.50	3.70
2	3.08	3.83	3.33	2.20	5.10	4.30	4.10	4.40	10.30	6.00	3.30	3.70
3	3.08	3.75	3.25	2.20	5.00	5.10	4.00	4.80	9.90	6.10	3.30	3.70
4	3.58	3.83	3.33	2.20	4.80	5.10	3.90	5.40	9.30	6.00	3.30	3.70
5	3.67	3.92	3.42	2.20	4.60	5.10	3.80	5.90	9.30	6.70	3.30	3.70
6	3.67	3.92	3.42	2.20	4.60	4.60	3.30	6.50	9.30	7.10	3.30	3.70
7	3.67	3.83	3.33	2.20	4.50	3.60	3.10	5.90	9.60	6.70	3.20	3.70
8	3.42	3.83	3.33	2.20	4.20	3.10	3.00	5.00	10.30	6.50	3.20	3.70
9	3.42	3.83	3.25	2.20	3.80	2.90	3.00	4.60	10.50	6.30	3.20	3.80
10	3.42	3.83	3.25	2.20	3.70	2.80	6.00	4.20	10.70	6.40	3.20	3.80

Daily gage height, in feet, of Kings River at Kingsburg, Cal., for 1891–1904—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895–6.												
11	3.50	3.75	3.25	2.10	3.60	2.90	5.70	3.70	9.90	6.70	3.30	3.70
12	3.50	3.67	3.17	2.10	3.50	3.10	4.60	4.00	10.00	6.50	3.60	3.80
13	3.75	3.33	3.17	2.10	3.30	3.50	4.00	4.70	9.90	6.30	3.80	3.70
14	3.83	3.25	3.17	2.20	3.10	3.60	3.00	5.30	9.60	6.10	3.80	3.60
15	3.83	3.25	3.25	2.20	2.80	3.80	6.10	6.20	9.50	5.90	3.80	3.60
16	3.92	3.25	3.25	2.20	2.80	3.60	4.60	6.30	9.30	5.50	3.70	3.50
17	3.83	3.17	3.25	3.30	2.70	3.20	3.70	5.80	9.80	5.50	3.70	3.50
18	3.92	3.17	3.08	5.40	3.00	3.30	3.10	6.20	9.30	5.60	3.70	3.50
19	3.92	3.17	3.00	8.70	3.00	3.70	3.00	6.20	8.70	5.60	3.80	3.50
20	4.00	3.17	3.17	6.50	3.00	3.70	4.30	5.90	8.40	5.00	3.90	3.50
21	4.17	3.17	3.25	8.00	2.90	4.20	4.20	6.20	8.50	4.70	3.80	3.50
22	4.17	3.17	3.25	7.70	2.90	4.50	4.00	6.40	8.00	4.60	3.80	3.50
23	4.25	3.08	2.83	6.50	2.60	4.50	3.40	6.10	7.70	4.30	3.70	3.40
24	4.25	3.08	2.50	6.20	2.40	5.00	3.30	6.60	7.20	6.40	3.70	3.40
25	4.17	3.08	2.50	5.90	2.50	5.80	5.00	7.40	7.00	5.70	3.70	3.40
26	4.08	3.00	2.67	5.90	2.50	5.50	7.20	8.40	6.80	5.40	3.70	3.40
27	4.08	3.08	2.50	5.80	2.50	8.00	6.60	9.30	6.70	4.90	3.70	4.10
28	4.00	3.17	2.42	6.10	2.60	6.30	5.70	10.30	6.70	4.30	3.70	4.30
29	3.92	3.17	2.42	6.10	3.00	5.80	4.70	11.10	6.70	3.90	3.70	4.30
30	3.92	3.25	2.42	5.80	.....	5.20	4.80	10.20	6.50	3.70	3.70	4.30
31	3.83	.....	2.33	5.50	.....	4.80	.....	9.80	.....	3.60	3.70	.....
1896–97.												
1	4.40	4.40	4.40	4.08	5.54	5.63	5.63	8.04	8.83	5.21	4.00	3.17
2	4.50	4.30	4.50	4.00	8.58	6.21	5.79	7.50	8.25	5.37	3.88	3.29
3	4.50	4.30	4.50	3.79	6.63	5.79	5.21	8.08	8.08	5.58	3.75	3.25
4	4.50	4.20	4.50	3.67	6.21	5.92	4.92	8.83	8.12	5.62	3.75	3.25
5	4.50	4.00	4.50	4.08	6.08	5.54	5.08	9.42	8.12	5.50	3.75	3.25
6	4.60	3.80	4.50	4.00	7.13	5.58	5.21	9.58	8.33	5.46	3.66	3.25
7	4.60	3.80	4.50	4.00	6.42	7.58	5.50	9.54	8.37	5.33	3.50	3.25
8	4.60	3.70	4.40	3.67	6.04	6.67	5.75	9.33	8.21	5.12	3.46	3.25
9	4.50	3.70	4.30	3.25	5.88	6.00	5.83	9.17	7.96	4.66	3.50	3.25
10	4.50	3.60	4.30	3.25	5.83	5.92	6.13	9.38	8.00	4.33	3.42	3.17
11	4.50	4.00	4.40	3.17	5.54	5.58	6.54	9.75	7.62	4.54	3.46	3.17
12	4.50	4.90	4.50	3.25	5.33	5.54	6.58	9.71	7.37	4.42	3.50	3.17
13	4.60	4.50	4.30	3.38	5.21	5.46	6.92	9.88	7.42	4.62	3.42	3.00
14	4.50	4.30	4.80	3.92	5.04	5.29	7.33	10.04	7.29	4.79	3.37	3.04
15	4.50	4.00	3.50	4.50	4.92	5.17	7.67	9.83	7.12	5.25	3.25	3.25
16	4.50	3.90	3.20	4.08	4.83	5.00	7.88	10.04	6.92	5.21	3.25	3.25
17	4.30	3.70	3.30	3.88	4.63	5.00	7.88	9.04	6.17	5.04	3.25	3.25
18	3.80	3.50	3.70	3.58	5.75	5.50	8.13	8.79	5.75	4.62	3.21	3.25
19	3.30	3.50	4.00	3.42	5.96	5.67	8.00	8.92	5.54	4.21	3.00	3.25
20	3.30	3.70	4.00	3.42	6.08	5.71	7.54	9.29	5.46	4.08	3.33	3.25
21	3.30	3.70	4.10	3.46	6.00	5.71	6.92	9.75	5.17	3.70	3.33	3.25
22	3.30	3.60	4.10	3.50	5.92	5.38	6.71	10.04	5.04	3.54	3.58	3.37
23	3.10	3.70	4.00	3.50	5.63	4.83	6.54	10.79	5.29	3.29	3.50	3.33
24	3.10	3.80	4.00	3.50	5.42	4.58	6.29	11.33	5.37	3.54	3.25	3.00
25	3.00	4.70	3.80	3.58	5.42	4.58	6.38	10.37	5.46	3.33	3.25	3.04
26	3.00	5.30	3.80	3.50	5.50	4.96	6.71	9.92	5.54	3.50	3.25	3.25
27	3.50	4.70	3.90	3.33	5.50	5.71	7.04	9.54	5.29	3.50	3.96	3.25
28	4.00	4.60	4.20	3.29	5.50	5.46	7.54	9.66	5.25	3.46	3.08	3.33
29	4.50	4.50	4.40	3.58	.....	7.04	7.75	9.70	5.21	3.42	3.25	3.33
30	4.40	4.40	4.30	3.54	.....	6.08	7.83	9.70	5.17	3.50	3.33	3.25
31	4.40	.....	4.20	4.79	.....	5.50	.....	9.54	.....	3.92	3.17	.....
1897–98.												
1	3.29	5.00	5.04	4.70	3.50	2.75	3.83	6.00	5.50	3.12	3.66	3.46
2	3.33	4.96	5.12	4.25	3.50	3.00	3.75	5.58	5.50	3.62	3.50	3.46
3	3.33	4.83	4.96	3.83	3.50	3.04	3.83	5.08	5.08	3.75	3.25	3.46
4	3.13	4.83	4.92	3.87	3.46	3.00	3.83	4.71	4.75	3.46	3.17	3.50
5	3.08	4.75	4.87	3.83	3.42	3.21	3.79	4.37	4.75	3.54	3.17	3.46
6	3.21	4.70	4.83	3.70	3.50	3.17	4.00	3.58	5.17	3.54	3.08	3.46
7	3.33	4.66	4.75	3.70	4.37	3.13	4.12	3.79	4.96	3.79	3.04	3.42
8	3.50	4.66	4.83	3.75	5.83	3.08	4.00	4.42	4.92	4.04	3.08	3.42
9	3.54	4.37	7.08	4.00	4.75	3.17	4.14	4.58	4.50	3.96	3.04	3.42
10	3.67	4.17	6.08	3.75	3.42	3.21	4.04	5.42	4.21	3.92	3.00	3.37
11	3.67	4.17	5.62	3.75	3.00	4.17	4.21	6.00	3.75	3.96	3.00	3.42
12	3.71	4.17	5.50	3.50	2.87	4.00	4.50	6.33	3.46	4.00	3.00	3.33
13	3.67	4.17	5.50	3.08	2.58	3.87	4.54	6.33	4.17	4.00	3.00	3.33
14	3.75	4.12	5.46	3.46	2.75	3.54	4.87	6.08	5.04	4.04	3.00	3.33
15	4.08	4.08	5.37	3.17	2.66	3.50	5.17	5.83	5.08	4.08	3.00	3.33

Daily gage height, in feet, of Kings River at Kingsburg, Cal., for 1891–1904—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897–98.												
16	4.79	4.00	5.29	3.50	2.92	3.46	5.47	5.83	5.17	4.00	2.96	3.33
17	4.62	3.83	5.17	3.50	3.12	3.38	5.40	5.50	4.83	4.00	2.92	3.33
18	4.50	3.75	5.08	3.75	3.08	3.29	5.66	5.42	4.58	4.08	2.92	3.42
19	4.46	3.75	5.08	3.54	3.00	3.29	6.14	5.75	4.50	4.17	3.46	3.33
20	4.50	3.75	4.92	3.50	3.00	3.33	6.70	5.33	4.25	4.04	3.38	3.33
21	4.33	3.75	4.83	3.50	3.13	3.37	6.66	4.83	4.75	3.38	3.46	3.33
22	4.29	6.54	4.75	3.50	3.08	3.33	5.91	5.58	4.79	3.17	3.46	3.33
23	4.33	5.92	4.75	3.50	3.00	3.50	5.62	5.92	4.50	3.21	3.50	3.33
24	4.50	5.75	4.66	3.58	2.96	3.50	6.08	6.00	4.12	3.62	3.42	3.33
25	5.12	6.58	4.83	3.66	2.96	3.50	6.75	6.00	3.79	3.75	3.42	3.66
26	5.08	5.66	4.79	3.33	3.00	3.75	7.12	5.75	3.42	3.92	3.42	3.70
27	5.25	5.46	4.96	3.50	2.50	3.75	7.08	6.50	3.42	3.83	3.42	3.91
28	5.21	5.33	4.96	3.50	2.75	3.54	7.00	6.00	3.50	3.83	3.42	6.00
29	5.08	5.12	4.83	3.50	.....	3.66	6.83	5.58	3.25	3.83	3.42	5.08
30	5.00	5.08	4.83	3.50	.....	3.75	6.00	5.92	3.00	3.75	3.42	4.62
31	5.00	.....	4.83	3.50	.....	3.75	.....	5.67	.....	3.71	3.42	.....
1898–99.												
1	4.21	3.42	4.04	3.92	4.16	3.83	4.08	4.83	6.75	5.67	4.00	3.25
2	4.00	3.38	4.23	3.92	4.08	3.83	4.25	4.58	6.92	5.50	4.00	3.25
3	3.87	3.50	4.17	4.00	4.08	3.92	4.00	4.25	6.67	5.42	4.00	3.25
4	3.75	3.58	4.17	4.00	4.08	3.83	4.17	4.33	6.58	5.00	4.00	3.25
5	3.66	3.67	4.04	3.92	4.16	3.92	4.25	4.42	6.83	4.92	3.92	3.25
6	3.83	3.58	4.04	3.92	4.25	3.92	4.66	4.58	8.00	4.50	3.83	3.25
7	3.83	3.50	4.00	4.00	4.25	3.92	6.33	4.83	8.50	4.33	3.75	3.25
8	3.75	3.48	4.00	4.00	4.33	3.83	6.75	5.25	8.50	4.25	3.83	3.25
9	3.83	3.58	3.98	4.00	4.33	3.83	7.00	5.08	8.58	4.58	3.83	3.25
10	3.75	3.58	4.00	4.00	4.25	3.83	7.08	5.50	8.58	4.25	3.83	3.21
11	3.75	3.58	3.96	5.42	4.25	3.83	7.08	7.00	9.00	4.00	3.75	3.25
12	3.75	3.58	4.00	5.83	4.25	3.83	7.00	8.17	9.00	3.67	3.58	3.25
13	3.75	3.48	3.92	4.33	4.16	3.75	7.00	8.33	8.75	3.75	3.58	3.25
14	3.66	3.42	3.96	3.66	4.16	3.92	7.17	8.08	8.00	4.00	3.54	3.21
15	3.70	3.42	4.00	3.92	4.16	3.83	7.25	7.17	8.00	4.17	3.50	3.25
16	3.83	3.50	3.96	3.92	4.16	3.92	7.75	7.00	7.83	4.00	3.46	3.25
17	3.75	3.50	4.00	3.92	4.16	3.92	7.50	6.50	7.50	4.17	3.60	3.25
18	3.79	3.42	3.98	4.00	4.00	3.92	7.25	6.67	7.50	4.25	3.25	3.25
19	3.77	3.42	4.00	3.92	4.00	3.83	7.08	6.67	7.25	4.33	3.25	3.25
20	3.75	3.62	4.08	4.08	4.25	3.92	7.00	6.58	7.33	4.25	3.25	3.25
21	3.73	3.62	4.08	4.00	4.25	3.92	7.25	6.25	7.00	4.17	3.21	3.25
22	3.60	3.79	6.17	4.00	4.25	3.92	7.17	6.33	6.83	4.17	3.17	3.17
23	3.58	3.75	4.87	4.08	4.16	3.83	7.08	6.75	6.83	4.08	3.17	3.17
24	3.58	3.92	4.25	4.16	4.25	9.33	7.00	7.67	6.50	4.00	3.17	3.17
25	3.56	4.00	3.83	4.00	3.83	11.25	6.25	7.00	6.50	4.00	3.12	3.17
26	3.50	3.96	3.67	4.00	3.83	8.92	5.83	6.58	6.25	4.00	3.08	3.12
27	3.50	3.92	4.00	4.08	4.00	6.75	5.33	6.33	6.25	4.08	3.08	3.08
28	3.50	4.00	3.96	4.08	4.00	5.50	5.17	6.25	5.50	3.92	3.00	3.08
29	3.50	4.00	3.92	4.08	.....	5.33	4.92	6.42	5.58	4.00	3.00	3.08
30	3.42	4.00	4.00	4.16	.....	4.75	4.66	6.75	5.75	4.00	3.00	3.08
31	3.42	.....	4.00	4.16	.....	4.42	.....	6.50	.....	4.00	3.25	.....
1899–1900.												
1	2.83	3.92	5.08	6.58	5.58	4.75	4.50	4.33	8.33	5.50	4.75	3.42
2	2.25	3.83	5.08	6.42	5.50	4.83	4.92	4.42	8.33	5.33	4.67	3.49
3	2.25	3.83	5.08	8.83	5.42	4.92	4.50	4.25	8.25	4.75	4.67	3.42
4	2.25	3.83	5.08	9.50	5.42	5.17	4.00	4.25	8.00	4.25	4.67	3.42
5	2.25	3.75	5.08	7.75	5.33	6.75	3.58	4.67	7.67	3.83	4.67	3.42
6	2.25	3.75	5.08	7.16	5.25	5.25	3.33	6.00	7.67	4.50	4.58	3.67
7	2.25	3.67	5.33	6.92	5.08	4.92	3.58	5.50	8.00	4.50	4.58	3.75
8	2.25	3.67	5.08	6.75	4.83	4.50	5.75	5.83	8.08	4.67	4.58	3.58
9	2.25	3.83	5.08	6.50	4.50	4.25	5.00	6.50	7.83	5.00	4.58	3.58
10	2.25	4.25	5.08	6.42	4.50	4.17	4.92	7.17	7.67	5.50	4.58	3.58
11	2.25	5.25	4.75	6.33	4.33	4.83	4.58	7.50	7.08	5.33	4.58	3.50
12	2.25	4.92	4.83	6.25	4.25	5.17	4.58	7.75	7.33	5.00	4.42	3.42
13	2.25	5.50	4.92	6.17	4.25	5.00	4.67	7.08	6.83	4.83	4.33	3.33
14	2.33	5.25	5.75	6.17	4.50	5.25	4.75	6.75	6.83	5.00	4.25	3.33
15	2.75	5.17	5.25	6.17	4.92	5.50	4.67	6.92	6.58	4.75	4.17	3.25
16	3.08	5.42	8.00	6.17	4.50	5.58	4.58	8.00	6.50	4.50	4.08	3.25
17	3.17	5.83	7.33	6.17	4.25	4.92	4.67	8.75	6.42	4.33	4.00	3.75
18	3.25	5.67	6.83	6.17	4.25	5.00	4.25	9.00	6.33	4.17	3.83	3.92
19	3.50	5.42	6.50	6.12	4.25	5.00	4.25	9.00	6.50	4.25	3.75	3.92
20	3.67	5.25	6.25	6.08	4.50	5.08	4.67	9.25	6.75	4.25	3.67	3.83

Daily gage height, in feet, of Kings River at Kingsburg, Cal., for 1891–1904—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899–1900.												
21	3.75	5.33	6.00	6.08	4.58	4.50	5.50	9.08	6.83	4.17	3.58	3.33
22	4.17	5.25	6.00	6.08	4.83	4.42	5.50	9.50	6.75	4.33	3.50	3.17
23	5.67	5.42	5.83	6.08	4.83	4.25	5.50	9.17	6.58	4.42	3.50	3.17
24	5.00	5.25	5.75	6.00	4.83	4.17	5.25	9.08	6.42	4.50	3.42	3.08
25	4.58	5.17	5.50	6.00	4.75	4.17	4.67	8.25	6.25	4.50	3.33	3.00
26	4.33	5.08	6.00	5.92	4.75	4.25	4.67	8.50	6.08	4.50	3.58	3.17
27	4.08	5.08	6.00	5.83	4.67	5.00	4.33	8.75	6.08	4.67	3.58	3.33
28	4.00	5.08	5.83	5.75	4.83	4.50	4.00	9.00	6.17	4.67	3.50	3.92
29	4.00	5.17	6.00	5.75	.....	4.17	3.83	8.25	6.08	4.67	3.50	4.17
30	3.96	5.17	5.83	5.67	.....	4.42	4.00	8.50	5.92	4.75	3.42	4.00
31	3.92	.....	7.50	5.67	.....	4.83	.....	8.50	.....	4.75	3.42	.....
1900–01.												
1	4.00	3.33	5.42	4.2	6.3	8.0	5.3	8.9	10.3	10.5	4.2	2.9
2	3.83	3.42	5.33	4.1	6.2	8.1	5.0	8.4	11.1	10.3	4.4	2.8
3	3.75	3.58	5.25	4.0	6.1	8.3	5.2	7.9	11.5	9.0	4.3	2.7
4	3.75	3.58	5.25	4.4	6.2	8.1	5.3	7.8	11.8	8.3	4.8	2.7
5	3.83	3.58	5.33	9.0	6.3	7.9	4.7	8.1	11.7	8.0	7.0	2.7
6	4.42	3.50	5.33	10.3	8.0	7.9	4.7	8.3	11.7	8.0	7.0	2.7
7	4.50	3.42	5.25	14.7	7.7	7.9	5.4	8.7	11.6	7.9	5.5	2.7
8	4.25	3.42	5.42	9.5	7.3	7.8	5.5	9.2	11.4	7.8	4.7	2.9
9	3.75	3.50	5.42	8.3	7.6	7.7	5.4	10.0	10.9	7.5	4.3	3.0
10	3.25	3.50	5.33	7.8	7.3	7.5	5.4	10.5	10.0	6.7	3.8	2.9
11	3.17	3.50	5.25	7.5	7.2	7.3	5.3	11.2	9.2	6.3	3.7	2.9
12	3.17	3.58	5.17	7.3	7.0	7.3	5.3	11.5	8.8	6.2	3.3	2.9
13	3.17	3.58	5.00	7.1	6.9	7.2	5.2	11.4	8.4	6.1	3.0	2.9
14	3.00	3.50	4.83	6.8	6.8	7.0	5.3	11.0	7.7	5.7	2.7	2.9
15	2.92	3.50	4.75	6.7	6.7	6.8	6.1	11.0	7.5	5.5	2.6	2.9
16	3.08	3.75	5.00	6.7	6.9	6.8	5.9	11.5	8.7	5.3	3.1	2.9
17	3.17	4.58	4.83	6.5	7.0	6.7	6.2	12.0	9.5	5.2	3.1	2.9
18	3.17	7.00	4.83	6.3	8.7	6.7	6.3	12.1	9.9	5.2	3.4	2.9
19	3.17	5.83	4.92	6.3	8.7	6.7	7.0	11.5	9.8	5.1	3.7	2.8
20	3.08	5.50	4.92	6.3	8.7	6.7	7.4	10.7	9.7	4.8	3.7	2.8
21	3.08	8.42	4.83	6.3	8.6	6.7	8.2	9.7	10.2	4.8	3.3	3.1
22	3.83	12.58	4.83	6.7	9.7	6.7	8.3	9.0	10.8	4.8	3.1	3.2
23	3.67	7.17	4.83	6.3	8.6	6.6	8.5	9.0	10.7	5.1	3.0	3.2
24	3.50	6.50	4.58	6.3	9.3	6.6	8.7	8.5	9.8	5.0	2.9	3.3
25	3.50	6.17	4.58	6.2	8.6	6.2	9.0	8.0	9.3	4.7	3.0	3.4
26	3.42	6.00	5.00	6.2	8.2	6.3	8.6	8.0	8.5	4.5	3.0	3.4
27	3.33	5.92	4.83	6.0	8.0	6.3	8.3	7.7	8.3	4.3	2.9	3.4
28	3.33	5.75	4.58	5.9	7.9	5.8	8.4	7.5	9.3	4.3	2.9	3.4
29	3.33	5.50	4.58	6.1	.....	5.5	7.9	7.4	10.2	4.3	2.9	3.3
30	3.33	5.42	4.33	6.0	.....	5.5	10.3	7.7	10.8	4.1	3.0	3.3
31	3.42	.....	4.25	6.0	.....	5.5	.....	9.0	.....	4.0	2.9	.....
1901–2.												
1	3.3	4.5	5.3	3.8	3.3	4.3	4.1	3.8	7.5	3.8	2.7	1.6
2	3.3	4.5	5.3	3.8	3.3	3.3	4.2	3.3	6.7	3.6	2.7	1.7
3	3.3	4.4	5.2	3.8	3.3	6.3	3.8	3.5	6.1	3.4	2.7	1.6
4	3.3	4.3	5.2	4.4	3.4	4.3	3.8	3.7	7.3	2.8	2.5	1.6
5	3.2	4.3	5.5	4.4	3.4	3.3	3.8	3.8	8.0	2.3	2.5	1.6
6	3.0	4.4	5.6	4.3	3.4	3.1	3.8	4.7	8.4	2.0	2.4	1.6
7	2.7	4.4	6.0	4.3	3.5	4.5	3.6	4.8	9.0	2.0	2.3	1.6
8	2.7	4.3	5.4	4.3	3.6	4.3	3.8	6.1	9.3	1.9	2.5	1.6
9	2.7	4.3	5.3	4.0	3.7	4.9	5.9	7.8	9.4	2.7	2.4	1.6
10	2.7	4.3	5.3	3.9	3.6	6.0	4.8	7.7	9.3	2.9	2.4	1.7
11	2.8	4.6	5.3	3.9	3.5	4.8	4.1	7.5	8.8	3.6	2.3	3.7
12	2.8	4.6	4.8	3.8	3.5	4.2	3.6	7.8	9.5	4.1	2.3	1.7
13	2.8	4.6	4.6	3.8	3.6	3.8	3.7	8.3	9.5	4.3	2.3	1.7
14	2.7	4.6	4.3	3.8	3.7	4.3	3.9	7.3	8.3	3.9	2.2	1.7
15	2.7	4.5	4.3	3.7	3.5	4.2	4.3	6.3	7.7	3.6	2.2	1.7
16	2.7	4.5	4.4	3.4	3.5	3.8	4.1	5.6	7.5	3.3	2.1	1.7
17	2.8	4.4	4.3	3.4	3.6	3.8	4.5	6.3	7.0	3.3	2.0	1.7
18	2.7	4.3	4.3	3.4	3.7	3.9	5.3	7.3	6.8	3.2	1.9	1.7
19	2.7	4.3	4.3	3.3	3.7	4.2	6.5	6.1	6.8	3.3	1.8	1.7
20	2.8	4.3	4.3	3.3	3.5	4.3	5.9	5.5	6.7	2.8	1.8	1.6
21	2.8	4.3	4.3	3.3	3.5	3.9	5.1	4.8	6.7	2.9	1.8	1.6
22	2.8	4.3	4.2	3.2	3.7	3.7	5.3	4.3	6.5	2.8	1.8	1.6
23	2.8	4.3	4.1	3.3	3.8	3.4	3.1	4.4	6.0	2.8	1.8	1.6
24	2.8	4.2	4.1	3.3	3.8	3.5	3.3	4.9	5.8	2.8	1.8	1.4
25	2.8	4.1	4.1	3.3	5.6	3.5	3.3	6.1	5.3	2.8	1.8	1.4

Daily gage height, in feet, of Kings River at Kingsburg, Cal., for 1891–1904—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901–2.												
26	3.0	4.0	4.1	3.4	6.1	3.3	2.8	6.3	5.1	2.8	1.8	1.5
27	3.1	4.1	3.8	3.5	5.9	3.3	2.7	7.0	4.7	3.0	1.8	1.5
28	6.1	4.1	3.7	3.3	6.1	3.3	2.8	8.5	4.2	3.0	1.8	1.4
29	5.0	4.3	3.7	3.4	.....	3.3	2.8	9.0	3.9	3.1	1.7	1.3
30	4.7	6.3	3.7	3.4	.....	3.6	2.8	9.0	3.9	3.0	1.6	1.3
31	4.6	.....	3.7	3.4	.....	4.0	.....	8.8	.....	2.8	1.6	.....
1902–3.												
1	1.3	1.8	4.7	5.0	5.9	5.2	6.7	7.8	9.8	6.7	4.4	2.3
2	1.3	1.7	4.7	5.0	5.8	5.1	7.6	7.7	10.3	6.7	4.2	2.3
3	1.3	1.7	4.8	5.0	4.8	5.2	7.6	7.9	10.0	6.5	4.2	2.2
4	1.3	1.7	4.8	5.0	5.4	5.2	6.2	8.0	9.6	6.2	4.2	2.2
5	1.3	2.0	4.8	5.0	5.5	5.5	6.0	8.2	9.8	6.0	4.2	2.2
6	1.3	2.3	4.8	4.9	4.5	5.6	6.0	8.2	9.8	5.8	4.2	2.2
7	1.3	2.5	4.8	4.9	5.3	5.3	5.9	8.1	10.0	5.3	4.2	2.1
8	1.3	2.8	4.8	4.9	5.6	5.3	5.6	9.0	9.2	5.5	4.2	2.1
9	1.3	3.3	4.9	4.9	5.6	5.4	5.8	9.2	8.8	5.0	4.2	2.1
10	1.3	3.9	5.0	4.9	5.3	5.3	6.0	9.7	8.8	4.7	4.0	2.1
11	1.3	5.3	5.1	4.8	5.0	5.2	6.2	10.1	8.8	5.5	3.7	2.0
12	1.3	4.9	5.1	4.8	5.0	5.3	5.9	10.6	8.1	5.3	3.3	2.0
13	1.3	4.5	5.0	4.8	4.8	5.2	5.7	10.8	8.1	5.3	3.2	2.1
14	1.3	4.9	5.0	4.8	4.0	5.3	5.7	10.5	8.5	5.3	3.2	2.3
15	1.3	4.9	5.1	4.8	5.0	5.4	5.7	10.1	8.5	5.3	3.2	2.3
16	1.3	4.8	5.1	4.8	5.2	5.4	5.3	9.8	7.5	5.3	3.2	2.3
17	1.3	4.6	5.0	4.8	5.5	5.3	5.4	8.6	7.1	5.2	3.1	2.3
18	1.3	4.5	5.0	4.2	5.4	5.3	5.5	8.2	7.2	5.2	2.9	2.3
19	1.3	4.6	5.0	4.1	5.3	5.2	5.5	7.2	7.4	5.2	2.8	2.3
20	1.3	4.8	5.0	4.0	5.3	5.2	5.4	7.2	7.9	5.2	2.8	2.3
21	1.3	5.1	4.8	4.0	5.3	5.2	5.4	6.9	7.9	5.2	2.8	2.3
22	1.3	4.8	4.8	3.9	5.4	5.2	5.5	6.6	8.0	5.2	2.9	2.3
23	1.4	4.9	5.0	3.7	5.3	5.2	5.8	6.5	7.6	5.0	3.0	2.3
24	1.4	4.8	5.0	3.6	5.3	5.3	6.4	6.2	7.5	5.1	2.9	2.2
25	1.7	4.8	4.9	3.6	5.3	7.1	7.0	6.0	7.8	4.9	2.8	2.2
26	2.6	4.7	5.0	4.0	5.3	6.2	7.2	5.9	7.8	4.8	2.6	2.2
27	2.4	4.7	5.0	4.8	5.2	5.7	7.1	6.0	7.7	4.8	2.6	2.2
28	2.5	4.8	5.1	10.5	5.2	5.4	6.7	6.0	7.3	4.8	2.6	2.2
29	2.5	4.7	5.0	7.1	.....	5.9	6.0	7.8	7.2	4.8	2.4	2.3
30	2.5	4.7	4.9	5.8	.....	6.0	6.6	9.5	6.9	4.5	2.4	2.5
31	1.8	.....	4.9	6.0	.....	6.2	.....	9.8	.....	4.3	2.3	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1903–4.							1903–4.						
1	2.6	3.6	4.9	2.2	2.2	4.3	16	3.2	4.0	2.5	1.7	3.4	.....
2	2.5	3.6	4.8	2.2	2.2	4.2	17	3.1	4.2	2.3	1.7	7.0	.....
3	2.6	3.6	4.5	2.2	2.2	4.0	18	2.9	4.3	2.4	1.7	5.2	.....
4	2.8	3.6	4.1	2.1	2.2	4.1	19	2.8	4.3	2.4	2.1	4.3	.....
5	2.7	3.6	3.8	2.1	2.2	4.1	20	2.8	4.3	2.4	2.1	3.9	.....
6	2.6	3.8	3.5	2.0	2.5	4.0	21	2.9	4.5	2.6	2.2	4.1	.....
7	2.6	3.8	3.1	2.0	2.8	3.9	22	2.9	5.2	2.5	2.1	4.1	.....
8	2.6	3.7	2.9	2.0	2.5	.....	23	3.2	5.2	2.8	2.1	4.0	.....
9	2.5	3.7	2.8	2.0	2.8	.....	24	3.5	5.2	2.5	2.0	3.8	.....
10	2.5	3.8	2.5	2.0	2.5	.....	25	3.4	5.2	2.5	2.2	4.1	.....
11	2.5	3.8	2.5	2.0	2.4	.....	26	3.4	5.2	2.5	2.2	4.1	.....
12	3.0	3.8	2.5	1.1	2.4	.....	27	3.5	5.1	2.5	2.2	4.3	.....
13	3.3	3.9	2.5	1.8	2.5	.....	28	3.4	5.0	2.5	2.2	4.9	.....
14	3.4	3.9	2.5	1.1	3.0	.....	29	3.5	4.9	2.5	2.2	5.6	.....
15	3.4	4.0	2.5	1.8	3.0	.....	30	3.5	4.9	2.4	2.2	.....	.....
							31	3.5	.....	2.4	2.2	.....	.....

Monthly discharge of Kings River at Kingsburg, Cal., for 1896–97.

[Drainage area, 1,742 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1896.						
May	20,147	408	3,945	2.26	2.61	242,569
June	19,670	3,225	11,652	6.69	7.46	693,342
July	4,239	452	1,942	1.11	1.28	119,408
August	549	400	465	.27	.31	28,567
September	641	420	476	.27	.30	28,294
1896-97.						
October	815	385	628	.36	.42	38,590
November	1,450	415	625	.36	.40	37,202
December	830	385	581	.33	.38	35,730
January	805	350	520	.30	.35	31,974
February	8,420	690	1,841	1.06	1.10	102,244
March	12,000	580	1,569	.90	1.04	96,475
April	7,050	665	3,043	1.75	1.95	181,072
May	18,900	4,910	11,360	6.52	7.52	698,504
June	10,690	644	4,354	2.50	2.79	259,080
July	775	230	460	.26	.30	28,284
August	305	208	228	.13	.15	14,019
September	222	210	216	.12	.13	12,853
The year	18,900	208	2,120	1.22	16.53	1,540 000
1897.						
October	615	215	350	0.20	0.23	21,520
November	2,850	278	676	.39	.44	40,225
December	3,440	433	765	.44	.50	47,038

DINKEY CREEK NEAR OCKENDEN, CAL.

This station was established September 17, 1910, at the trail bridge at the Dinkey Creek ranger station, in the Sierra National Forest, in sec. 20, T. 10 S., R. 26 E., about 11 miles above the junction with North Fork of Kings River 9½ miles southeast of Ockenden.

Rock Creek enters 3 miles above and Bear Creek 1½ miles below the gage. A small unnamed tributary joins the stream at Dinkey Meadows 100 feet above the station.

The vertical staff gage is on the right bank about 400 feet below the ranger's station.

Discharge measurements are made by wading at low and medium stages. A car and cable for making gagings at high water was installed October 1911.

There is but one channel at all stages, as both banks are high. The bed of the stream is composed of gravel and small bowlders and the current is swift. Conditions are fairly satisfactory for making accurate measurements.

This station is maintained in cooperation with the United States Forest Service and during the summer months only.

Discharge measurements of Dinkey Creek near Ockenden, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-ft.*
Sept. 19	J. E. Stewart	0.28	2.8
Nov. 2	H. J. Tompkins	.33	5.0
1911.			
June 11	H. J. Tompkins	2.90	736
Sept. 22	.....do	.80	31
1912.			
May 9	H. J. Tompkins	1.52	167

Daily gage height, in feet, of Dinkey Creek near Ockenden, Cal., for 1911–12.

Day.	May, 1911.	June, 1911.	July, 1911.	Aug., 1911.	Sept., 1911.	May, 1912.	June, 1912.	Day.	May, 1911.	June, 1911.	July, 1911.	Aug., 1911.	Sept., 1911.	May, 1912.	June, 1912.
1	.....	.....	2.35	0.9	0.5	.....	2.6	16	.....	3.25	1.75	0.7	0.4	.....	.....
2	.....	.....	2.4	.8	.5	.....	.....	17	.....	3.3	1.9	.6	.....	.....	1.25
3	.....	.....	2.5	.8	.5	.....	.....	18	.....	2.1	1.8	.6	.....	.....	1.4
4	.....	.....	2.4	.8	.5	.....	.....	19	.....	3.05	1.55	.6	.4	.....	.....
5	.....	.....	2.3	.8	.5	.....	.....	20	.....	3.15	1.5	.6	.....	.....	.....
6	.....	.....	2.35	.75	.5	.....	.....	21	.....	2.9	1.35	.6	.4	.....	.....
7	.....	.....	2.25	.7	.5	.....	2.2	22	.....	2.8	1.25	.6	1.0	.....	1.1
8	.....	3.2	2.1	.7	.5	.....	2.35	23	.....	2.55	1.2	.5	.....	.....	1.0
9	.....	3.0	2.05	.7	.4	1.52	.....	24	.....	2.35	1.15	.5	.5	.....	.....
10	.....	3.15	1.95	.7	.4	.....	.....	25	.....	2.35	1.15	.5	.....	.....	.9
11	.....	3.2	1.95	.7	.4	.....	.....	26	.....	2.65	1.05	.5	.5	.....	.....
12	.....	3.25	1.85	.7	.....	.....	.....	27	.....	2.65	1.0	.5	.....	.....	.....
13	.....	3.3	1.85	.7	.4	.....	1.6	28	2.8	2.5	.95	.5	.5	.....	.9
14	.....	3.2	1.85	.7	.....	.....	.....	29	2.5	2.5	.9	.5	.5	.....	.....
15	.....	3.15	1.75	.7	.....	.....	1.6	30	.....	2.4	.85	.5	.5	3.0	.8
								31	.....	.....	.85	.5	.....	.....	.....

NOTE.—The following additional gage heights were observed by J. E. Stewart in 1910: Sept. 20, 0.28 foot; Sept. 21, 0.27 foot.

Daily discharge, in second-feet, of Dinkey Creek near Ockenden, Cal., for 1911–12.

Day.	May, 1911.	June, 1911.	July, 1911.	Aug., 1911.	Sept., 1911.	May, 1912.	June, 1912.
1	.....	.....	462	41	12	.....	582
2	.....	.....	487	31	12	.....	.....
3	.....	.....	533	31	12	.....	.....
4	.....	.....	487	31	12	.....	.....
5	.....	.....	442	31	12	.....	.....
6	.....	.....	462	27	12	.....	.....
7	.....	.....	420	23	12	.....	399
8	.....	903	358	23	12	.....	464
9	.....	792	339	23	8	166	.....
10	.....	875	302	23	8	.....	.....
11	.....	903	302	23	8	.....	.....
12	.....	931	268	23	8	.....	.....
13	.....	960	268	23	8	.....	188
14	.....	903	268	23	8	.....	.....
15	.....	875	235	23	8	.....	188
16	.....	931	235	23	8	.....	.....
17	.....	960	284	17	8	.....	100
18	.....	358	251	17	8	.....	134
19	.....	820	174	17	8	.....	.....
20	.....	875	160	17	8	.....	.....
21	.....	738	122	17	8	.....	.....
22	.....	685	100	17	54	.....	70
23	.....	558	89	12	33	.....	54
24	.....	462	80	12	12	.....	.....
25	.....	462	80	12	12	.....	41

Daily discharge, in second-feet, of Dinkey Creek near Ockenden, Cal., for 1911–1912—Con.

Day.	May, 1911.	June, 1911.	July, 1911.	Aug., 1911.	Sept., 1911.	May, 1912.	June, 1912.
26	.....	608	62	12	12	.....	.....
27	.....	608	54	12	12	.....	.....
28	685	533	48	12	12	.....	41
29	533	533	41	12	12	.....	.....
30	.....	487	36	12	12	792	31
31	.....	.....	36	12	.....	.....	.....

NOTE.—Daily discharge determined from a well-defined rating curve.

Monthly discharge of Dinkey Creek near Ockenden, Cal., for 1911.

Month.	Discharge in second-feet.			Run-off (in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1911.					
June (8–30)	960	462	729	33,300	A.
July	533	36	241	14,800	A.
August	41	12	20.4	1,250	B.
September	54	8	12.4	738	B.
The period	.....	.....	.....	50,100	

BIG CREEK NEAR TOLLHOUSE, CAL.

This station, which is located at Hawk's mine, in the Sierra National Forest, in the SW. ¼ sec. 27, T. 10 S., R. 25 E., 3½ miles above the junction with Kings River, about 9 miles east of Tollhouse, was established March 21, 1911.

Two small ditches take water above the station. One of these is used to operate a small stamp mill and the water is returned to the creek below the gage. The other ditch is used for irrigation.

The gage is a vertical staff in two sections on the left bank near the observer's cabin.

The bed of the stream is composed of bowlders and solid rock and is apparently permanent.

Discharge measurements are made by wading above the gage.

The gage-height record is furnished by Ira F. Hawk.

Record of discharge measurements is furnished by the United States Forest Service.

Discharge measurements of Big Creek near Tollhouse, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-ft.*
Mar. 21	H. J. Tompkins	2.60	122
June 10	.....do	.20	28
Sept. 23	.....do	−1.30	2.4
1912.			
May 9	H. J. Tompkins	−0.10	26

Daily gage height, in feet, of Big Creek near Tollhouse, Cal., for 1911–12.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Mar.	Apr.	May	June.	July	Aug.	Sept.
1911.								1911.							
1	.....	2.6	1.8	0.8	−0.5	−1.1	−1.3	16	.....	2.1	.....	0.0	−0.9	−1.2	−1.3
2	.....	2.5	1.8	.7	− .5	−1.1	−1.3	17	.....	2.2	1.3	.0	− .9	−1.2	−1.3
3	.....	2.5	1.8	.7	− .6	−1.1	−1.3	18	.....	2.3	1.2	− .1	− .9	−1.2	−1.3
4	.....	2.3	1.9	.5	− .6	−1.1	−1.3	19	.....	2.4	1.3	− .2	− .9	−1.2	−1.3
5	.....	3.5	2.0	.6	− .6	−1.2	−1.3	20	.....	2.4	1.3	− .2	− .9	−1.2	−1.3
6	.....	4.5	1.7	.5	− .7	−1.2	−1.3	21	2.6	2.2	1.2	− .3	−1.0	−1.2	−1 3
7	.....	2.8	1.8	.5	− .7	−1.2	−1.3	22	2.6	2.2	1.3	− .3	−1.0	−1.2	−1.3
8	.....	2.7	1.7	.4	− .7	−1.2	−1.3	23	2.5	2.2	1.3	− .3	−1.0	−1.3	−1.3
9	.....	2.6	1.7	.3	− .7	−1.2	−1.3	24	2.4	2.2	1.2	− .3	−1.0	−1.3	−1.3
10	.....	2.6	1.6	.3	− .7	−1.2	−1.3	25	2.4	2.3	1.0	− .3	−1.0	−1.3	−1.3
11	.....	2.4	1.5	.2	− .7	−1.2	−1.3	26	2.4	2.4	1.0	− .3	−1.1	−1.3	−1.3
12	.....	2.3	1.5	.1	− .7	−1.2	−1.3	27	2.3	2.4	.9	− .3	−1.1	−1.3	−1.3
13	.....	2.2	.....	.0	− .8	−1.2	−1.3	28	2.3	2.0	.8	− .4	−1.1	−1.3	−1.3
14	.....	2.0	.....	.0	− .8	−1.2	−1.3	29	2.4	1.8	.8	− .4	−1.1	−1.3	−1.3
15	.....	2.1	.....	.0	− .8	−1.2	−1.3	30	2.4	1.6	.9	− .5	−1.1	−1.3	−1.3
								31	2.4	.....	.9	.....	−1.1	−1.3	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	−1.3	−1.3	−1.2	−0.8	−1.1	−1.2	−0.5	0.1	−0.6
2	−1.3	−1.3	−1.2	− .7	−1.1	−1.2	− .3	.0	− .6
3	−1.3	−1.3	−1.2	−1.0	−1.1	−1.2	− .3	− .2	− .7
4	−1.3	−1.3	−1.2	−1.0	−1.1	− .3	.0	− .1	.....
5	−1.3	−1.3	−1.2	−1.0	−1.1	− .5	− .2	.0	− .8
6	−1.3	−1.3	−1.1	−1.0	−1.1	+2.5	− .4	.0	− .8
7	−1.3	−1.3	−1.2	−1.0	−1.1	+1.0	− .3	.0	− .9
8	−1.3	−1.3	−1.2	−1.0	−1.1	.0	− .1	.0	− .9
9	−1.3	−1.2	−1.2	−1.1	−1.1	− .4	.0	.0	− .9
10	−1.3	−1.0	−1.2	−1.1	−1.1	− .3	+ .2	.0	− .9
11	−1.3	−1.1	−1.2	−1.3	−1.1	− .5	.3	+ .1	− .9
12	−1.3	−1.1	−1.2	−1.1	−1.1	− .5	.0	.3	−1.0
13	−1.3	−1.1	−1.2	−1.1	−1.1	− .5	− .1	.3	− .9
14	−1.3	−1.2	−1.2	−1.0	−1.1	− .5	.0	.3	− .9
15	−1.3	−1.2	−1.2	−1.0	−1.1	− .3	.0	.3	−1.0
16	−1.3	−1.1	−1.2	−1.1	−1.1	− .3	+ .5	.3	−1.0
17	−1.3	−1.2	−1.2	−1.0	−1.1	− .4	.3	.3	−1.0
18	−1.3	−1.2	−1.2	− .8	−1.1	− .3	.3	.0	−1.0
19	−1.3	−1.2	−1.2	− .9	−1.1	− .1	.0	.0	−1.1
20	−1.3	−1.2	−1.2	− .9	−1.1	− .1	− .1	− .1	−1.1
21	−1.3	−1.2	−1.2	− .9	−1.1	− .1	− .2	− .3	−1.1
22	−1.3	−1.2	−1.2	− .9	−1.1	− .3	− .2	− .2	−1.1
23	−1.3	−1.2	−1.2	− .9	−1.1	− .3	− .2	− .2	−1.1
24	−1.3	−1.2	−1.2	− .9	−1.1	− .3	.0	− .2	−1.1
25	−1.3	−1.2	−1.2	− .9	−1.1	− .3	− .2	− .1	−1.1
26	−1.3	−1.2	−1.2	− .8	−1.1	− .4	− .2	− .1	−1.1
27	−1.3	−1.2	−1.2	− .2	−1.1	− .2	− .1	− .2	−1.1
28	−1.3	−1.2	.....	−1.1	−1.2	− .4	− .1	− .2	−1.2
29	−1.3	−1.2	− .8	−1.1	−1.2	− .2	.0	− .2	−1.2
30	−1.3	−1.2	− .8	−1.1	.....	− .2	.2	− .4	−1.2
31	−1.3	.....	− .8	−1.1	.....	− .5	.....	− .5	.....

NOTE.—Relation of gage height to discharge probably affected by ice about Dec. 21, 1911, to Jan. 10, 1912.

Daily discharge, in second-feet, of Big Creek near Tollhouse, Cal., for 1911–12.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.								1911.							
1	.....	122	85	47	15	4.5	2.5	16	.....	97	66	25	7.5	3.5	2.5
2	.....	117	85	44	15	4.5	2.5	17	.....	102	65	25	7.5	3.5	2.5
3	.....	117	85	44	13	4.5	2.5	18	.....	107	61	23	7.5	3.5	2.5
4	.....	107	89	38	13	4.5	2.5	19	.....	112	65	21	7.5	3.5	2.5
5	.....	172	93	41	13	3.5	2.5	20	.....	112	65	21	7.5	3.5	2.5
6	.....	238	81	38	11	3.5	2.5	21	122	102	61	19	6	3.5	2.5
7	.....	132	85	38	11	3.5	2.5	22	122	102	65	19	6	3.5	2.5
8	.....	127	81	35	11	3.5	2.5	23	117	102	65	19	6	2.5	2.5
9	.....	122	81	32	11	3.5	2.5	24	112	102	61	19	6	2.5	2.5
10	.....	122	77	32	11	3.5	2.5	25	112	107	53	19	6	2.5	2.5
11	.....	112	73	29	11	3.5	2.5	26	112	112	53	19	4.5	2.5	2.5
12	.....	107	73	27	11	3.5	2.5	27	107	112	50	19	4.5	2.5	2.5
13	.....	102	71	25	9	3.5	2.5	28	107	93	47	17	4.5	2.5	2.5
14	.....	93	69	25	9	3.5	2.5	29	112	85	47	17	4.5	2.5	2.5
15	.....	97	67	25	9	3.5	2.5	30	112	77	50	15	4.5	2.5	2.5
								31	112	.....	50	.....	4.5	2.5	.....

Daily discharge, in second-feet, of Big Creek near Tollhouse, Cal., for 1911–12—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	2.5	2.5	3.5	2	4.5	3.5	15	27	13
2	2.5	2.5	3.5	2	4.5	3.5	19	25	13
3	2.5	2.5	3.5	2	4.5	3.5	19	21	11
4	2.5	2.5	3.5	2	4.5	19	25	23	10
5	2.5	2.5	3.5	2	4.5	15	21	25	9
6	2.5	2.5	4.5	2	4.5	117	17	25	9
7	2.5	2.5	3.5	2	4.5	53	19	25	7.5
8	2.5	2.5	3.5	2	4.5	25	23	25	7.5
9	2.5	3.5	3.5	2	4.5	17	25	25	7.5
10	2.5	6	3.5	2	4.5	19	29	25	7.5
11	2.5	4.5	3.5	2.5	4.5	15	32	27	7.5
12	2.5	4.5	3.5	4.5	4.5	15	25	32	6
13	2.5	4.5	3.5	4.5	4.5	15	23	32	7.5
14	2.5	3.5	3.5	6	4.5	15	25	32	7.5
15	2.5	3.5	3.5	6	4.5	19	25	32	6
16	2.5	4.5	3.5	4.5	4.5	19	38	32	6
17	2.5	3.5	3.5	6	4.5	17	32	32	6
18	2.5	3.5	3.5	9	4.5	19	32	25	6
19	2.5	3.5	3.5	7.5	4.5	23	25	25	4.5
20	2.5	3.5	3.5	7.5	4.5	23	23	23	4.5
21	2.5	3.5	3	7.5	4.5	23	21	19	4.5
22	2.5	3.5	3	7.5	4.5	19	21	21	4.5
23	2.5	3.5	3	7.5	4.5	19	21	21	4.5
24	2.5	3.5	3	7.5	4.5	19	25	21	4.5
25	2.5	3.5	3	7.5	4.5	19	21	23	4.5
26	2.5	3.5	3	9	4.5	17	21	23	4.5
27	2.5	3.5	3	21	4.5	21	23	21	4.5
28	2.5	3.5	2	4.5	3.5	17	23	21	3.5
29	2.5	3.5	2	4.5	3.5	21	25	21	3.5
30	2.5	3.5	2	4.5	.....	21	29	17	3.5
31	2.5	.....	2	4.5	.....	15	.....	15	.....

NOTE.—Daily discharge determined from a fairly well-defined rating curve. Discharge interpolated May 13–16, 1911, and June 4, 1912. Discharge estimated on account of ice Dec. 21, 1911, to Jan. 10, 1912.

Monthly discharge of Big Creek near Tollhouse, Cal., for 1911–12.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1911.					
March 21–31	122	107	113	2,470	A.
April	238	77	114	6,780	A.
May	93	47	68.4	4,210	A.
June	47	15	27.2	1,620	B.
July	15	4.5	8.63	531	C.
August	4.5	2.5	3.34	205	C.
September	2.5	2.5	2.50	149	D.
The period	.....	.....	.....	16,000	
1911–12.					
October	2.5	2.5	2.50	154	D.
November	6	2.5	3.45	205	C.
December	4.5	2	3.23	199	D.
January	21	2	5.27	324	C.
February	4.5	3.5	4.43	255	C.
March	117	3.5	21.5	1,320	B.
April	38	15	24.1	1,430	B.
May	32	15	24.5	1,510	B.
June	13	3.5	6.62	394	C.
The period	.....	.....	.....	5,790	

RUSH CREEK NEAR OCKENDEN, CAL.

Rush Creek is tributary to Big Creek, which enters Kings River in T. 12 S., R. 25 E.

This station, which is located at Peterson's sawmill, about 3 miles southeast of Ockenden, in the Sierra National Forest, was established September 22, 1910.

Taylor Creek enters 1 mile above the gage. No water is at present diverted for irrigation.

The gage is a vertical staff fastened to a large cedar tree, on the right bank, 200 feet above the wagon bridge. At high stages discharge measurements are made from the bridge; at low stages by wading above the gage.

Both banks are high and wooded and not subject to overflow. The channel is composed of sand and will shift at high stages.

.This station is maintained in cooperation with the United States Forest Service.

Discharge measurements of Rush Creek near Ockenden, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-feet.*
Sept. 22	J. E. Stewart	0.40	0.5
Nov. 1	H. J. Tompkins	.45	1.2
1911.			
Jan. 10	H. J. Tompkins	1.05	8.6
Mar. 20[a]	do		65
June 10[b]	do	2.25	10
Sept. 23	do	1.85	1.3
1912.			
May 10	H. J. Tompkins	2.22	7.3

[a] Gage gone. [b] Gage replaced at same location but different datum.

NOTE.—The following measurements were made of discharge in Peterson's mill flume, which diverts water from Rush Creek above the gage: Sept. 22, 1910, 0.37 second-foot; Nov. 1, 1910, 0.18 second-foot.

Daily gage height, in feet, of Rush Creek near Ockenden, Cal., for 1910–11.

Day.	Nov.	Dec.	Jan.	Day.	Nov.	Dec.	Jan.	Day.	Nov.	Dec.	Jan.
1910-11.				1910-11.				1910-11.			
1	0.45	0.51	0.52	11		0.98	0.95	21	0.53	0.53	1.35
2	.45	.51	.52	12		.76	.92	22	.53	.53	1.20
3	.45	1.55	.50	13		.75	.95	23	.53	.53	.95
4		.75	.50	14		.64	.95	24	.52	.53	3.10
5		.52	.48	15		.58	1.75	25	.82	.53	3.65
6		.51	.48	16		.54	1.15	26	.96	.52	1.65
7		.49	.47	17		.52	.95	27	.65	.52	1.25
8		.48	.47	18		.54	.95	28	.58	.52	1.7
9		.47	1.44	19		.54	.85	29	.54	.52	3.75
10		.47	1.20	20	0.54	.54	1.85	30	.51	.52	3.88
								31		.52	4.75

BIG CREEK NEAR SHAVER, CAL.

Big Creek rises on the Kaiser Ridge, in the Sierra National Forest, and flows southwestward to its junction with San Joaquin River, in sec. 27, T. 8 S., R. 24 E. Its rapid fall and storage possibilities make it an important power stream.

The daily discharge is computed from records obtained at a weir, 101 feet long, located in sec. 28, T. 8 S., R. 25 E., about 5½ miles northeast of Shaver.

The following records of daily discharge, which include the flow of Pitman Creek, were furnished by the San Joaquin Light & Power Corporation, through G. O. Newman, chief engineer.

Daily discharge, in second-feet, of Big Creek near Shaver, Cal., for 1910–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
1910.								
1	288	72	103	292	1,655	646	56	12
2	157	72	113	330	1,740	523	53	12
3	126	86	126	418	1,576	447	50	12
4	119	72	140	525	1,260	335	47	12
5	98	72	146	525	1,247	326	44	12
6	129	72	220	445	1,675	298	41	12
7	105	72	190	605	2,040	270	41	12
8	84	74	220	770	2,700	238	35	12
9	84	72	220	935	2,320	208	35	12
10	88	72	220	1,010	2,370	220	32	12
11	84	75	246	890	2,500	191	32	12
12	73	72	280	735	2,600	185	30	12
13	73	72	280	935	2,540	169	28	12
14	69	75	305	990	2,005	169	28	12
15	75	70	250	1,210	2,045	169	28	12
16	75	58	235	1,276	2,005	151	21	12
17	98	72	300	1,460	1,655	140	21	12
18	75	72	405	2,040	1,560	128	28	12
19	75	72	550	2,700	1,513	119	28	12
20	72	70	535	2,770	1,396	111	21	12
21	72	92	370	3,260	1,261	107	19	12
22	72	72	308	6,600	1,261	98	17	12
23	72	72	268	6,600	1,213	98	19	12
24	72	72	245	4,680	1,123	89	19	12
25	72	72	235	7,000	1,032	76	20	12
26	72	61	206	6,500	959	68	20	12
27	72	72	215	2,644	932	62	19	12
28	72	92	206	2,500	855	65	19	12
29	70	.....	211	2,040	832	59	17	12
30	75	.....	225	1,720	782	59	19	12
31	72	.....	254	.....	700	.....	19	12

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	8	12	.....	18	493	88	267	648	1,163	1,150	92	13
2	8	12	.....	18	405	88	282	723	1,311	1,163	86	11
3	8	12	.....	13	342	109	301	907	1,818	1,113	80	11
4	9	12	.....	10	273	119	262	1,031	2,079	1,011	64	13
5	9	12	.....	8	236	112	240	1,051	2,306	916	72	13
6	9	12	.....	10	210	98	248	820	2,285	854	68	13
7	9	12	.....	15	201	92	292	933	2,109	746	70	13
8	9	12	.....	15	197	101	297	1,011	2,285	655	58	13
9	9	12	.....	30	145	101	297	976	2,453	590	55	14
10	9	12	.....	26	130	105	267	933	3,275	562	53	14

Daily discharge, in second-feet, of Big Creek near Shaver, Cal., for 1910–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
11	30	12	.....	18	119	109	258	1,061	5,702	541	53	16
12	23	17	.....	18	134	101	253	1,133	.....	482	48	18
13	29	17	.....	26	116	98	235	1,133	.....	438	45	14
14	30	17	.....	17	98	98	248	1,031	.....	391	43	14
15	25	12	.....	24	92	101	277	898	.....	470	34	13
16	25	12	.....	47	92	105	317	800	.....	846	32	11
17	30	12	.....	42	92	112	380	949	.....	1,031	30	11
18	21	12	.....	28	92	123	432	1,091	.....	555	28	11
19	12	12	.....	18	88	126	426	1,445	.....	590	24	9
20	12	12	.....	30	88	126	426	1,621	.....	287	22	9
21	12	17	.....	42	92	126	541	1,926	10,800	292	22	13
22	12	17	.....	42	98	126	634	2,432	7,800	230	20	40
23	12	17	.....	37	95	134	634	2,411	5,800	210	20	30
24	12	17	.....	55	98	141	700	2,010	4,200	192	20	18
25	12	17	.....	50	98	201	669	1,568	5,300	168	18	14
26	12	12	.....	35	95	168	655	1,372	6,350	150	16	14
27	12	12	.....	35	98	172	582	1,676	5,950	137	16	14
28	12	12	.....	61	92	210	534	1,648	5,600	125	14	14
29	12	12	.....	482	.....	241	527	1,518	3,600	110	14	18
30	12	12	.....	1,196	.....	273	598	1,203	1,975	101	13	18
31	12	.....	.....	972	.....	270	.....	1,081	.....	101	13	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1911–12.							1911–12.						
1	22	13	14	16	18.8	15.8	16	13	28	28	18	22	22
2	20	13	13	16	18.8	15.8	17	13	14	18	18	22	23.7
3	24	11	13	16	18.8	25.5	18	13	13	20	18	22	23.7
4	22	13	14	16	18.8	22	19	13	11	16	18	23.7	25.5
5	18	13	13	16	18.8	22	20	13	9	16	18	23.7	25.5
6	20	13	13	16	18.8	22	21	13	8	16	18	25.5	28.5
7	16	13	11	14	15.8	20	22	13	8	14	18	25.5	28.5
8	16	13	13	14	14.4	20	23	14	8	11	20	25.5	35.2
9	22	14	13	14	14.4	20	24	13	11	11	20	22	37
10	22	14	13	14	14.4	20	25	11	18	11	20	22	37
11	18	20	14	14	14.4	22	26	13	16	11	20	25.5	37
12	16	18	18	14	15.8	22	27	13	16	11	22	25.5	25.5
13	16	22	14	18	15.8	22	28	13	16	14	22	25.5	25.5
14	14	18	14	18	18.8	22	29	13	14	16	22	25.5	41.8
15	13	24	13	18	18.8	22	30	11	14	16	22	.....	41.8
							31	13	.....	16	22	.....	46.6

Monthly discharge of Big Creek near Shaver, Cal., for 1910–1912.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910.				
January	288	69	91.6	5,630
February	92	58	73.2	4,070
March	550	103	252	15,500
April	7,000	292	2,150	128,000
May	2,700	700	1,590	97,800
June	646	59	194	11,500
July	56	17	29.2	1,800
August	12	12	12.0	738
September	.....	.....	[a]13.8	821
The period	.....	.....	.....	266,000

[a] Estimated.

Monthly discharge of Big Creek near Shaver, Cal., for 1910–1912—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910–11.				
October	30	8	14.7	904
November	17	12	13.3	791
December	.....	.....	[a] 15.0	922
January	1,200	8	111	6,820
February	493	88	157	8,720
March	273	88	135	8,300
April	700	235	403	24,000
May	2,430	648	1,260	77,500
June (21 days)	10,800	1,160	4,010	167,000
July	1,160	101	523	32,200
August	92	13	40.1	2,470
September	40	9	14.9	887
1911–12.				
October	24	11	15.6	959
November	28	8	14.5	863
December	28	11	14.5	892
January	22	14	17.7	1,090
February	26	14	20.4	1,170
March	47	16	26.4	1,620
The period	.....	.....	.....	6,590

[a] Estimated.

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

NORTH FORK OF SAN JOAQUIN RIVER NEAR NORTH FORK, CAL.

North Fork of San Joaquin River enters the upper San Joaquin River from the north a short distance above Horseshoe Bend, in T. 9 S., R. 23 E. This station is just above the point where the stream empties into the Crane Valley reservoir. A small amount of storage is developed on the headwaters of North Fork. Water is also diverted into this drainage from Chiquito Creek.

The records of daily discharge were furnished by the San Joaquin Light & Power Corporation.

Daily discharge, in second-feet, of North Fork of San Joaquin River near North Fork, Cal., for 1910–11.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1910.							1910.						
1	80	90	39	10	4	2.5	16	100	70	18	7	3	8
2	78	74	39	10	4	3	17	113	65	18	7	3	5
3	70	74	36	9	3	3	18	115	65	17	7	3	4.5
4	71	74	36	9	3	3	19	119	61	16	7	3	4.5
5	71	67	32	9	3	3	20	120	53	15	7	3	4.5
6	74	73	28	9	3	2.5	21	105	56	15	6	3	4
7	74	70	25	9	3	2.5	22	120	56	14	6	3	4
8	77	70	25	8	3	2.5	23	120	56	13	6	3	4
9	77	65	24	8	3	2.5	24	120	50	12	6	3	4
10	77	70	24	8	3	2.5	25	120	50	12	6	3	4
11	100	70	20	8	3	2.5	26	120	44	11	5	3	3
12	100	65	20	8	3	2.5	27	117	44	11	5	3	3
13	100	70	20	7	3	3	28	120	44	11	5	3	3
14	100	74	20	7	3	15	29	113	44	10	5	3	3
15	100	70	21	7	3	20	30	80	44	10	5	2.5	3
							31	.....	42	.....	4	2.5	.....

Daily discharge, in second-feet, of North Fork of San Joaquin River near North Fork, Cal., for 1910–11—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	3	4.5	9	9	325	80	215	150	138	100	12	18
2	3	4.5	8	9	240	95	225	150	150	100	12	15
3	3	4.5	17	9	180	290	220	160	145	90	12	15
4	3	4.5	14	9	215	240	230	175	158	80	12	12
5	3	4.5	10	9	165	185	400	190	150	75	12	10
6	3	4.5	10	9	121	130	320	170	147	70	12	9
7	3	4.5	10	9	108	600	200	170	140	65	12	9
8	3	4.5	10	9	105	300	180	170	150	65	12	9
9	3	4.5	10	[a] 185	102	345	180	160	158	60	12	9
10	3	4.5	28	52	128	290	165	160	170	56	11	8
11	20	6	34	35	156	225	150	165	180	56	11	8
12	13	11	20	134	150	190	145	160	180	51	11	8
13	8	9	14	120	134	180	140	155	175	51	11	8
14	7.5	7.5	13	85	92	180	140	155	170	46	11	8
15	7.5	7.5	13	61	78	170	140	150	155	41	11	8
16	6	7	12	36	81	185	140	140	145	36	11	8
17	6	7.5	10	34	87	160	150	130	138	31	10	7
18	6	11	11	29	87	145	160	110	133	26	10	7
19	6	10.5	11	29	80	145	165	105	133	23	10	7
20	6	10.5	11	86	78	150	170	135	130	21	10	7
21	5.5	9.5	11	72	82	155	185	150	130	18	10	7
22	5	9.5	10	46	82	155	200	170	142	16	10	6
23	5	9	11	81	80	165	210	180	142	16	10	6
24	5	9	11	[a] 580	80	165	220	170	135	15	10	6
25	5	16	11	[a] 375	78	160	225	140	130	14	10	6
26	5	12	10	126	78	160	220	135	120	14	14	6
27	4.5	11	10	65	71	160	200	130	120	13	18	6
28	4.5	11	10	[a] 170	72	170	160	125	120	13	17	6
29	4.5	10	10	[a] 1,150	.....	185	150	150	105	13	20	6
30	4.5	9	10	[a] 2,000	.....	185	150	140	105	12	19	6
31	4.5	.....	9	[a] 900	.....	200	.....	140	.....	12	19	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	6	7	8	11	6	12	11	21	7	8	10
2	6	7	8	12	6	8	11	22	7	8	10
3	6	7	8	13	6	8	10	23	7	8	10
4	6	7	13	14	6	8	10	24	7	8	10
5	6	7	30	15	8	8	10	25	7	8	10
6	6	7	15	16	7	8	11	26	7	8	10
7	6	7	12	17	7	8	10	27	7	8	16
8	6	7	12	18	7	8	11	28	7	8	16
9	6	25	11	19	7	8	11	29	7	8	15
10	6	40	11	20	7	8	10	30	7	8	10
								31	7	.....	12

[a] Estimated.

Monthly discharge of North Fork of San Joaquin River near North Fork, Cal., for 1910–11.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910.				
April	120	70	98.4	5,860
May	90	42	61.9	3,810
June	39	10	20.4	1,210
July	10	4	7.10	437
August	4	2.5	3.03	186
September	20	2.5	4.38	261
The period	.....	.....	.....	11,764

Monthly discharge of North Fork of San Joaquin River near North Fork, Cal., for 1910–11—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910–11.				
October	20	3.0	5.45	335
November	16	4.5	7.95	473
December	34	8	12.5	769
January	2,000	9	214	13,200
February	325	71	119	6,610
March	600	80	198	12,200
April	400	140	192	11,400
May	190	105	151	9,280
June	180	105	143	8,510
July	100	12	41.9	2,580
August	20	10	12.3	756
September	18	6	8.37	498
The year	2,000	3.0	92.1	66,600
1911.				
October	8.0	6.0	6.58	405
November	40	7.0	9.50	565
December	30	8.0	11.7	719

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

SOUTH FORK CREEK [1] NEAR NORTH FORK, CAL.

South Fork Creek rises on the west slope of the Chiquit Ridge, in the Sierra National Forest, and flows generally south to its junction with North Fork Creek.

The gaging station was originally located at the highway bridge at South Fork. On January 17, 1911, it was moved 1 mile downstream to the concrete weir just above the mouth, in the SE. ¼ sec. 19, T. 8 S., R. 23 E., 5 miles east of North Fork. The discharge is computed from the gage-height record, which indicates the head on a 100-foot, broad-crested concrete weir. A Watson water-stage register is used and the weir rating is checked by current meter measurements.

Below the mouth of Browns Creek, about 6 miles above the station, water is diverted from South Fork Creek into Crane Valley reservoir.

The records of daily discharge were furnished by the San Joaquin Light & Power Corporation.

[1] Also known as South Fork of Willow Creek.

Daily discharge, in second-feet, of South Fork Creek near North Fork, Cal., for 1910–11.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1910.							1910.						
1	120	110	6	1	1	1	16	135	8	4	1	1	2
2	120	100	6	1	1	1	17	130	8	4	1	1	2
3	120	84	6	1	1	1	18	125	8	4	1	1	2
4	126	61	6	1	1	1	19	120	8	4	1	1	1
5	126	50	6	1	1	1	20	100	8	3	1	1	1
6	126	44	6	1	1	1	21	90	8	3	1	1	1
7	126	38	5	1	1	1	22	95	7	3	1	1	1
8	126	34	5	1	1	1	23	100	7	3	1	1	1
9	126	31	5	1	1	1	24	110	7	3	1	1	1
10	126	26	5	1	1	1	25	126	7	3	1	1	1
11	126	20	5	1	1	1	26	126	7	2	1	1	1
12	126	17	5	1	1	1	27	126	7	2	1	1	1
13	126	14	4	1	1	1	28	126	7	2	1	1	1
14	135	12	4	1	1	3	29	126	6	2	1	1	1
15	135	10	4	1	1	10	30	126	6	1	1	1	1
							31	.....	6	.....	1	1	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	1	1	2	3	900	60	370	290	202	37	18	5
2	1	1	2	3	500	89	380	294	196	37	18	5
3	1	1	3.5	3	360	209	368	318	220	36	17	5
4	1	1	3	3	200	268	316	358	222	36	17	4
5	1	1	3	3	164	210	558	370	218	35	16	4
6	1	1	3	3	162	160	632	304	214	35	16	4
7	1	1	3	3	120	392	438	320	201	34	15	4
8	1	1	3	3	107	451	388	320	190	34	15	4
9	1	1	3	75	100	392	418	308	178	33	14	4
10	1	1	15	40	92	471	354	324	178	32	14	4
11	1	1	20	28	95	304	340	295	197	32	14	4
12	3	1.5	16	65	85	233	284	310	180	31	13	4
13	4	1.5	12	55	143	200	260	280	172	30	13	4
14	3	1.5	10	30	107	190	252	260	162	29	12	4
15	3	1.5	7	22	90	188	256	225	145	28	12	4
16	3	1.5	6	18	86	185	275	204	145	27	11	4
17	3	2	6	14	74	200	290	194	142	27	11	4
18	2	2	6	12	77	197	320	202	121	26	10	4
19	2	2	5	11	77	212	329	225	114	26	10	4
20	2	2	5	20	72	220	320	250	104	25	9	4
21	2	2	5	60	63	234	320	252	95	25	9	4
22	2	2	5	25	60	212	340	296	88	24	8	3
23	1	2	5	17	63	212	370	300	80	23	8	3
24	1	2	5	180	64	216	388	274	72	23	7	3
25	1	3	5	240	60	212	410	234	64	22	7	3
26	1	3	5	140	57	214	416	207	57	21	7	3
27	1	2.5	4	50	54	225	365	208	52	20	6	3
28	1	2.5	4	35	52	252	310	238	47	20	6	3
29	1	2.5	4	1,950	.....	274	276	228	43	19	6	3
30	1	2	4	2,470	.....	305	265	217	39	19	5	3
31	1	.....	3	1,500	.....	325	.....	210	.....	18	5	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	3	4	9	11	3	17	12	21	4	9	12
2	3	4	9	12	3	15	12	22	4	12	12
3	3	4	10	13	3	12	12	23	4	10	12
4	3	4	10	14	3	10	12	24	4	9	12
5	3	4	14	15	5	8	12	25	4	9	12
6	3	4	18	16	5	15	14	26	4	9	12
7	3	4	14	17	4	10	14	27	4	9	12
8	3	4	12	18	4	10	14	28	4	9	12
9	3	4	12	19	4	10	14	29	4	9	12
10	3	60	12	20	4	9	14	30	4	9	12
								31	4	.....	12

Monthly discharge of South Fork Creek near North Fork, Cal., for 1910–11.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910.				
April	135	90	122	7,260
May	110	6	24.7	1,520
June	6	1	4.03	240
July	1	1	1	61.5
August	1	1	1	61.5
September	10	1	1.47	87.5
The period				9,230
1910–11.				
October	4	1	1.58	97.2
November	3	1	1.67	99.4
December	20	2	5.89	362
January	2,470	3	228	14,000
February	900	52	146	8,110
March	471	60	242	14,900
April	632	252	354	21,100
May	370	194	268	16,500
June	222	39	138	8,210
July	37	18	27.9	1,720
August	18	5	11.3	695
September	5	3	3.80	226
The year	2,470	1	119	86,000
1911.				
October	5	3	3.61	222
November	60	4	10.2	607
December	18	9	12.3	756

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

SOUTH FORK DITCH NEAR NORTH FORK, CAL.

The South Fork ditch diverts from South Fork Creek about one-fourth mile below the mouth of Browns Creek. The station is a short distance above the point where the canal empties into the Crane Valley reservoir.

The record of daily discharge was furnished by the San Joaquin Light & Power Corporation.

Daily discharge, in second-feet, of South Fork ditch near North Fork, Cal., for 1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	14	23	14.5	3	1	1.5	2	5
2	.....	18	23	13.5	3	1.5	1.5	2	3
3	4	19	23	13.5	3	1.5	1.5	2	10
4	4	23	25	13.4	3	1.5	1.5	2	9
5	4	9	25	12.5	3	1.5	1.5	2	6
6	5	34	22	12.5	3	1	1.5	2	6
7	4	38	21	10.5	3	1	1.5	2	7
8	3	33	21	10.5	3	1	1.5	2	7
9	3	29	20	9.5	2	1	1.5	2	7
10	1	19	20	9.5	2	1	1.5	2	17
11	1	33	18	9	2	1	17	3	12
12	1	33	18	9	2	1	10	6	8
13	1	40	18	9	2	2.5	4	4.5	6
14	6	43	18	8	2	12	4	3.5	6
15	7	43	18	7	2	9.5	3.5	3.5	6

Daily discharge, in second-feet, of South Fork ditch, near North Fork, Cal., for 1910— Continued.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
16	12	41	18	6	2	7	3.5	3.0	5
17	20	39	18	6	2	4	3	3.5	6
18	24	38	18	5	2	2.5	3	7.0	7
19	26	38	17	4	1.5	2	3	6.5	6
20	27	45	17	4	1.5	2	3	6.5	6
21	29	38	17	4	1.5	1.5	2.5	4.5	6
22	28	27	17	4	1.5	1.5	2	5.5	6
23	11	24	17	4	1.5	1.5	2	5	6
24	16	24	16	3	1.5	1.5	2	6	6
25	16	22	16	3	1.5	1.5	2	8	6
26	20	22	15.5	3	1.5	1.5	2	5	6
27	16	20	15.5	3	1.5	1.5	2	4	5
28	17	22	15.5	3	1.5	1.5	2	4	5
29	16	23	15.5	3	1.5	1.5	2	3	5
30	18	23	14.5	3	1	1.5	2	3	5
31	.....	22	.....	3	1	.....	2	.....	4

Monthly discharge of South Fork ditch near North Fork, Cal., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910.				
April 3–30	29	1	12.1	672
May	45	9	28.9	1,780
June	25	14.5	18.7	1,110
July	14.5	3	7.19	442
August	3	1	2.02	124
September	12	1	2.35	140
The period	.....	.....	.....	4,270
October	17	1.5	2.95	181
November	8	2	3.83	228
December	17	3	6.61	406

NOTE.—Monthly values computed by engineers of the United States Geological Survey from record of daily discharge furnished by the San Joaquin Light & Power Corporation. Accuracy values are not given as the base data were not furnished.

CRANE VALLEY RESERVOIR NEAR NORTH FORK, CAL.

Crane Valley reservoir was formed by constructing a dam on North Fork of San Joaquin River in the E. ½ sec. 26, T. 7 S., R. 22 E. The released water flows down the natural channel of the North Fork to a point just above the mouth of South Fork Creek, where it is diverted into the power canal.

The record of daily discharge, which was furnished by the San Joaquin Light & Power Corporation, shows the total inflow into this reservoir.

Daily discharge, in second-feet, into Crane Valley reservoir near North Fork, Cal., for 1910–11.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1910.							1910.						
1	97	114	69	26	8	4	16	125	117	41	14	6	16
2	96	102	69	25	8	5	17	146	109	41	14	6	10
3	89	103	66	24	7	5	18	152	107	40	13	9	7
4	92	107	67	24	7	5	19	158	103	38	12	5	7
5	92	86	63	23	7	5	20	161	102	37	12	5	6
6	95	119	56	23	7	4	21	146	98	37	11	5	6
7	94	118	52	21	7	4	22	160	90	36	11	5	6
8	95	113	52	20	7	4	23	142	87	34	11	5	6
9	95	104	50	19	6	4	24	147	81	32	10	5	6
10	93	99	50	19	6	4	25	147	79	32	10	5	6
11	119	112	43	18	6	4	26	151	73	30	9	5	5
12	119	107	43	18	6	4	27	145	73	30	9	5	5
13	118	118	43	17	6	6	28	148	75	30	9	5	5
14	122	124	43	16	6	31	29	141	76	29	9	5	5
15	121	120	44	15	6	38	30	108	76	28	9	4	5
							31	.....	73	.....	8	4	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	5	7	16	15	475	160	350	220	150	105	15	20
2	5	7	12	16	330	175	375	225	165	105	14	17
3	5	7	34	16	275	525	350	240	160	95	14	17
4	5	7	27	16	315	450	425	285	175	85	14	14
5	5	7	18	16	250	325	750	310	165	80	14	12
6	5	7	18	16	175	275	500	260	160	75	14	11
7	5	7	19	16	155	1,100	350	260	150	70	14	10.5
8	5	7	19	18	150	512	300	260	165	70	14	10.5
9	5	7	20	331	145	600	335	240	175	65	14	10.5
10	13	7	54	78	215	500	250	250	190	60	13	9.5
11	46	11	50	51	250	360	225	255	200	60	13	9.5
12	27	21	30	225	210	300	210	235	200	55	13	9.5
13	14	15	21	209	195	280	200	225	190	55	13	9.5
14	13	12	20	153	130	275	200	225	180	50	13	9.5
15	13	12	20	94	110	245	200	210	165	45	13	9.5
16	11	11	18	53	115	290	200	180	155	40	13	9.5
17	10	13	17	47	125	225	220	165	145	35	12	8.5
18	10	24	19	39	125	200	240	140	140	30	12	8.5
19	10	20	18	43	115	200	250	130	140	27	12	8.5
20	10	20	18	146	115	215	260	165	135	25	12	8.5
21	9	16	18	114	115	225	280	190	135	22	12	8.5
22	8	17	17	71	125	225	295	220	150	20	12	7.5
23	8	15	18	147	125	250	315	240	150	19	12	7.5
24	8	17	18	991	120	250	325	220	140	18	12	7.5
25	8	30	18	661	120	225	335	175	135	17	12	7.5
26	8	19	17	194	120	225	345	165	125	17	16	7.5
27	7	16	16	116	100	225	320	155	125	16	20	7.5
28	7	16	16	308	115	250	250	140	125	16	19	7.5
29	7	14	16	1,750	.....	275	230	185	110	16	22	7.5
30	7	13	16	2,750	.....	275	225	160	110	15	21	7.5
31	7	.....	14	1,250	.....	300	.....	155	.....	15	21	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	7.5	9	10	11	7.5	15	14	21	9	10	12
2	7.5	9	10	12	7.5	10	14	22	9	10	12
3	7.5	9	10	13	7.5	10	12	23	9	10	12
4	7.5	9	18	14	7.5	10	12	24	9	10	12
5	7.5	9	45	15	11	10	12	25	9	10	12
6	7.5	9	20	16	10	10	14	26	9	10	12
7	7.5	9	16	17	9.5	10	12	27	9	10	26
8	7.5	9	16	18	9.5	10	14	28	9	10	25
9	7.5	75	14	19	9	10	14	29	9	10	22
10	7.5	70	14	20	9	10	12	30	9	10	14
								31	9	.....	18

NOTE.—Record of daily discharge furnished by the San Joaquin Light & Power Corporation.

Monthly discharge into Crane Valley reservoir near North Fork, Cal., for 1910–11.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910.				
April	161	89	124	7,380
May	124	73	98.7	6,070
June	69	28	44.2	2,630
July	26	8	15.5	953
August	8	4	5.8	357
September	38	4	7.6	452
The period				17,800
1910–11.				
October	46	5	9.8	603
November	30	7	13.4	797
December	54	12	21.0	1,290
January	2,750	15	321	19,700
February	475	100	176	9,780
March	1,100	160	321	19,700
April	750	200	304	18,100
May	310	130	209	12,900
June	200	110	154	9,160
July	105	15	45.9	2,820
August	22	12	14.4	885
September	20	7.5	9.57	569
The year	2,750	5	144	96,300
1911.				
October	11	7.5	8.45	520
November	75	9	14.1	839
December	45	10	15.5	953

NOTE.—Monthly values computed by engineers of the United States Geological Survey from record of daily discharge furnished by the San Joaquin Light & Power Corporation. No accuracy values given, as the base data were not furnished.

WHISKY CREEK NEAR NORTH FORK, CAL.

Whisky Creek rises on the west slope of Whisky Ridge, in the Sierra National Forest, and flows south to its junction with Little North Fork of San Joaquin River in T. 9 S., R. 23 E.

The gaging station is just above the highway bridge in the SE. ¼ sec. 16, T. 8 S., R. 23 E., about one-fourth mile below Cascadel ranch, and 6 miles east of North Fork.

The staff gage is on the left bank about 500 feet above the bridge.

The channel is composed of gravel. Both banks are high and not likely to overflow.

Discharge measurements are made by wading near the gage.

The records of daily discharge were furnished by the San Joaquin Light & Power Corporation.

Daily discharge, in second-feet, of Whisky Creek near North Fork, Cal., for 1910–11.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1910.							1910.						
1	49	26	11	6	2.4	1.6	16	45	16	8	3	1.6	7
2	49	26	11	6	2.4	1.6	17	42	16	8	3	1.6	6
3	49	26	10	6	2.4	1.6	18	42	15	8	3	1.6	4
4	49	25	10	6	2.4	1.6	19	42	15	8	3	1.6	3
5	49	24	10	5	2.4	1.6	20	42	14	8	3	1.6	3
6	45	23	9	5	2.4	1.6	21	36	14	8	3	1.6	3
7	45	22	9	5	2.4	1.6	22	32	14	8	3	1.6	3
8	45	22	9	4	2.4	1.6	23	32	13	8	3	1.6	3
9	45	21	9	4	2.4	1.6	24	32	13	8	3	1.6	2
10	45	21	9	4	2.4	1.6	25	32	13	8	2	1.6	2
11	45	20	9	4	2.4	1.6	26	29	13	8	2	1.6	2
12	45	19	9	4	2.4	1.6	27	29	12	8	2	1.6	2
13	45	19	9	4	2.4	1.6	28	29	12	7	2	1.6	2
14	45	18	9	4	1.6	3.5	29	26	12	7	2	1.6	2
15	45	17	8	3	1.6	9	30	26	12	7	2	1.6	2
							31	.....	11	.....	2	1.6	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	1.5	1.5	2	3	186	54	82	74	50	25	14	5
2	1.5	1.5	2	3	75	54	78	76	52	25	14	5
3	1.5	1.5	4.5	3	106	82	76	82	53	24	14	5
4	1.5	1.5	4	3	84	77	95	91	49	24	13	5
5	1.5	1.5	3	3	73	71	130	95	47	24	13	5
6	1.5	1.5	3	3	64	84	110	80	45	23	13	5
7	1.5	1.5	3	3	52	160	80	84	42	23	13	5
8	1.5	1.5	3	3	47	136	72	80	42	23	12	5
9	1.5	1.5	3	20	45	110	70	79	43	22	12	5
10	1.5	1.5	9.5	14	42	84	68	81	41	22	12	5
11	1.5	1.5	12	9	68	60	67	76	40	21	12	5
12	2.5	2	8	18	61	58	65	82	40	20	11	5
13	4	2	6.5	15	57	57	68	80	38	20	11	4
14	3	2	5.5	12	54	55	65	70	37	19	11	4
15	3	2	4.5	10	52	55	66	66	37	19	10	4
16	2.5	2	4	9	46	68	70	57	34	18	10	4
17	2.5	3	4	8	54	52	75	48	34	18	10	4
18	2.5	3	4	6	45	50	77	50	33	18	9	4
19	2.5	3	4	4	38	47	79	64	32	18	9	4
20	2	3	3.5	8	36	58	80	67	32	17	9	4
21	2	3	3.5	17	34	60	82	65	30	17	8	4
22	2	3	3.5	14	39	56	84	73	30	16	8	4
23	2	3	3.5	10	37	72	87	81	30	16	8	4
24	2	3	3.5	45	31	68	91	78	29	16	7	4
25	2	4	3.5	65	29	64	94	65	29	16	7	4
26	2	4	3.5	33	43	60	99	52	27	15	7	4
27	2	3	3.5	24	47	65	86	50	27	15	6	4
28	2	3	3	19	52	65	82	49	27	15	6	4
29	1.5	3	3	56	.....	74	79	47	26	15	6	4
30	1.5	2	3	100	.....	79	75	50	26	14	5	4
31	1.5	.....	3	400	.....	81	.....	52	.....	14	5	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	4	4	6	11	4	14	10	21	4.5	16	10
2	4	4	6	12	4	9	10	22	4.5	20	10
3	4	4	6	13	4	7	10	23	4.5	16	9
4	4	4	9	14	4	5	10	24	4.5	11	9
5	4	4	16	15	5	5	10	25	4.5	6	9
6	4	4	12	16	5	5	10	26	4.5	6	9
7	4	4	10	17	5	5	10	27	4.5	6	11
8	4	4	10	18	4.5	5	12	28	4.5	6	12
9	4	4	10	19	4.5	5	12	29	4.5	6	10
10	4	22	10	20	4.5	5	10	30	4.5	6	9
								31	4.5	.....	8

NOTE.—Discharge Jan. 30–31, 1911, estimated.

Monthly discharge of Whisky Creek near North Fork, Cal., for 1910–11.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910.				
April	49	26	40.4	2,400
May	26	11	17.5	1,080
June	11	7	8.6	512
July	6	2	3.6	221
August	2.4	1.6	1.94	119
September	9	1.6	2.64	157
The period				4,490
1910–11.				
October	4	1.5	1.98	122
November	4	1.5	2.32	138
December	12	2	4.18	257
January	400	3	30.3	1,860
February	186	29	57.0	3,170
March	160	47	71.5	4,400
April	130	65	81.1	4,830
May	95	47	69.2	4,250
June	53	26	36.7	2,180
July	25	14	19.1	1,170
August	14	5	9.8	603
September	5	4	4.4	262
The year	400	1.5	32.3	23,200
1911.				
October	5	4	4.3	264
November	22	4	7.4	440
December	16	6	9.8	603

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

CASCADEL CREEK NEAR NORTH FORK, CAL.

Cascadel Creek is a small stream which joins Whisky Creek about one-fourth mile below Cascadel ranch.

The gaging station is 50 feet above the falls, just above the mouth, in the NE. ¼ sec. 21, T. 8 S., R. 23 E., and about 6 miles east of North Fork.

The staff gage is on the left bank at the trail crossing.

Discharge measurements are made by wading near the gage.

The records of daily discharge were furnished by the San Joaquin Light & Power Corporation.

Daily discharge, in second-feet, of Cascadel Creek near North Fork, Cal., for 1910–11.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1910.							1910.						
1	11	4	1	1	0.6	0.4	16	8	2	1	1	0.4	1.0
2	11	4	1	1	.6	.4	17	8	2	1	1	.4	.6
3	11	2	1	1	.6	.4	18	8	2	1	1	.4	.4
4	11	2	1	1	.6	.4	19	8	2	1	1	.4	.4
5	11	2	1	1	.6	.4	20	8	1	1	1	.4	.4
6	10	2	1	1	.6	.4	21	7	1	1	1	.4	.4
7	10	2	1	1	.6	.4	22	7	1	1	1	.4	.4
8	10	2	1	1	.6	4	23	7	1	1	1	.4	.4
9	10	2	1	1	.6	.4	24	5	1	1	1	.4	.4
10	10	2	1	1	.6	.4	25	5	1	1	1	.4	.4
11	10	2	1	1	.6	.4	26	4	1	1	1	.4	.4
12	10	2	1	1	.6	.4	27	4	1	1	1	.4	.4
13	8	2	1	1	.6	.4	28	4	1	1	1	.4	.4
14	8	2	1	1	.4	.7	29	4	1	1	1	.4	.4
15	8	2	1	1	.4	1.3	30	4	1	1	1	.4	.4
							31	.....	1	.....	1	.4	.....

Daily discharge, in second-feet, of Cascadel Creek near North Fork, Cal., for 1910–11—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910-11.												
1	0.3	0.4	0.6	0.5	24	10	14	12	8	3	1	0.6
2	.3	.4	.6	.5	14	10	13	13	8	3	1	.6
3	.3	.4	1.7	.5	17	14	13	13.5	8	2.5	1	.6
4	.3	.4	1.4	.5	15	13	15	14	8	2.5	1	.6
5	.3	.4	1.0	.5	12	13	20	14.5	7.5	2.5	1	.6
6	.3	.4	1.0	.5	10	14	19	13	7.5	2.5	1	.5
7	.3	.4	1.0	.5	9	24	14	12	7	2.5	1	.5
8	.3	.4	1.0	.5	9	18	12	12	7	2.5	1	.5
9	.3	.4	1.0	3.0	8	14	12	12	7	2	1	.5
10	.3	.4	3.0	2.0	8	12	11	12	7	2	1	.5
11	.3	.4	3.6	1.0	11	10	11	11.5	6.5	2	1	.5
12	1.0	.8	2.5	2.0	10	10	11	12.5	6.5	2	1	.5
13	1.5	.8	2.0	2.0	10	10	11	12.5	6.5	2	1	.5
14	1.5	.8	2.0	2.0	10	9	11	11	6	2	1	.5
15	1.5	.8	1.5	1.5	9	9	11	10.5	6	2	.8	.5
16	1.0	.8	1.5	1.5	9	11	12	9.5	6	2	.8	.5
17	1.0	1.0	1.5	1.5	9	9	13	8	6	2	.8	.5
18	1.0	1.0	1.5	1.0	8	9	13	10.5	5	2	.8	.5
19	1.0	1.0	1.5	1.0	7	9	14	10.5	5	2	.8	.4
20	.6	1.0	1.0	1.0	7	10	14	10.5	5	1.5	.8	.4
21	.6	1.0	1.0	2.0	7	10	14	11.5	4.5	1.5	.8	.4
22	.6	1.0	1.0	2.0	7	10	14	12.5	4.5	1.5	.8	.4
23	.6	1.0	1.0	1.0	7	13	14	12	4.5	1.5	.8	.4
24	.6	1.0	1.0	7.0	6	12	15	10.5	4	1.5	.8	.4
25	.6	1.4	1.0	10.0	6	11	15	8	4	1.5	.6	.4
26	.6	1.4	1.0	6.0	8	10	17	8	4	1.5	.6	.4
27	.6	1.0	1.0	3.0	8	11	14	7.5	3.5	1.5	.6	.4
28	.6	1.0	.5	2.5	9	11	14	7.5	3.5	1.5	.6	.4
29	.4	1.0	.5	8.0	.....	13	14	8	3	1	.6	.4
30	.4	.6	.5	15.0	.....	14	13	8	3	1	.6	.4
31	.4	.....	.5	45.0	.....	14	.....	8.5	.....	1	.6	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	0.4	0.6	1	11	.4	2.0	1	21	0.6	3.5	1
2	.4	.6	1	12	.4	1.5	1	22	.6	2.	1
3	.4	.6	1	13	.4	1.0	1	23	.6	1	1
4	.4	.6	1.5	14	.4	.8	1	24	.6	1	1
5	.4	.6	3	15	.6	.8	1	25	.6	1	1
6	.4	.6	3	16	.6	.8	1	26	.6	1	1
7	.4	.6	2	17	.6	.8	1	27	.6	1	2
8	.4	.6	1	18	.6	.8	2	28	.6	1	2
9	.4	.6	1	19	.6	.8	2	29	.6	1	1.5
10	.4	4.0	1	20	.6	.8	1.5	30	.6	1	1
								31	.6	.....	1

NOTE.—Discharge estimated, Jan. 30–31, 1911.

Monthly discharge of Cascadel Creek near North Fork, Cal., for 1910–11.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910.				
April	11	4	8.0	476
May	4	1	1.7	105
June	1	1	1.0	60
July	1	1	1.0	61
August	.6	.4	.48	30
September	1.3	.4	.47	28
The period	.....	.....	.....	760

Monthly discharge of Cascadel Creek near North Fork, Cal., for 1910–11—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910–11.				
October	1.5	0.3	0.63	39
November	1.4	.4	.76	45
December	3.6	.5	1.29	79
January	45	.5	4.03	248
February	24	6	9.79	544
March	24	9	11.8	726
April	20	11	13.6	809
May	14.5	7.5	10.9	670
June	8	3	5.73	341
July	3	1	1.92	118
August	1	.6	.85	52
September	.6	.4	.48	29
The year	45	.3	5.15	3,700
1911.				
October	0.6	0.4	.51	31
November	4	.6	1.10	65
December	3	1	1.34	82

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

FRESNO RIVER AT BASE OF FOOTHILLS, MADERA COUNTY, CAL.

The following information regarding records of discharge of Fresno River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

The point of observation was at the head of the Fresno River Canal & Irrigation Co.'s canal, about 3 miles above the railroad crossing near Madera. A record of gage heights was obtained for only one season. The figures in the following tables are hence mainly estimated from run-off from near-by drainage area, and the results of one year's gage height record checked by occasional observations through the remainder of the period. The results represent the discharge of the stream as it enters the valley part of its course.

Monthly discharge of Fresno Creek at base of foothills, Madera County, Cal., for 1878–1884.

[Drainage area, 272 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.						
November[a]			0.0	0.0	0.0	0
December[a]			.0	.0	.0	0
January	80	0	27	.10	.12	1,660
February	117	66	80	.29	.30	4,443
March	202	66	118	.43	.50	7,256
April	202	124	156	.57	.64	9,283
May	102	66	79	.29	.33	4,858
June	54	0	15	.06	.07	893
July	0	0	.0	.0	.0	0
August	0	0	.0	.0	.0	0
September	0	0	.0	.0	.0	0
October	0	0	.0	.0	.0	0
The year	202	0	39.6	.146	1.96	28,400

[a] Estimated from run-off of neighboring streams.

Monthly discharge of Fresno Creek at base of foothills, Madera County, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1879–80.[a]						
November	0	0	0.0	0.0	0.0	0
December			109	.40	.46	6,702
January			5	.02	.02	307
February			150	.55	.59	8,628
March			16	.06	.07	984
April			1,088	4.00	4.46	64,740
May			54	.20	.23	3,320
June			27	.10	.11	1,607
July			.0	.0	.0	0
August			.0	.0	.0	0
September			.0	.0	.0	0
October			.0	.0	.0	0
The year			121	.444	5.94	86,300
1880–81.[a]						
November			.0	.0	.0	0
December			218	.80	.92	13,404
January			544	2.00	2.31	33,449
February			544	2.00	2.08	30,212
March			272	1.00	1.15	16,725
April			109	.40	.45	6,486
May			54	.20	.23	3,320
June			0	.0	.0	0
July			.0	.0	.0	0
August			.0	.0	.0	0
September			.0	.0	.0	0
October			.0	.0	.0	0
The year			145	.533	7.14	104,000
1881–82.[a]						
November			.0	.0	.0	0
December			27	.10	.12	1,660
January			54	.20	.23	3,320
February			163	.60	.62	9,053
March			1,088	4.00	4.61	66,899
April			272	1.00	1.12	16,185
May			54	.20	.23	3,320
June			.0	.0	.0	.....
July			.0	.0	.0	.....
August			.0	.0	.0	.....
September			.0	.0	.0	.....
October			27	.10	.12	1,660
The year			140	.516	7.05	102,000
1882–83.[a]						
November			54	.20	.22	3,213
December			27	.10	.12	1,660
January			82	.30	.35	5,042
February			54	.20	.21	2,999
March			272	1.00	1.15	16,725
April			136	.50	.56	8,093
May			109	.40	.46	6,702
June			.0	.0	.0	0
July			.0	.0	.0	0
August			.0	.0	.0	0
September			.0	.0	.0	0
October			.0	.0	.0	0
The year			61.1	.225	3.07	44,400
1883–84.[a]						
November			.0	.0	.0	0
December			.0	.0	.0	0
January			27	.10	.12	1,660
February			1,360	5.00	5.39	78,228
March			1,632	6.00	6.92	100,348
April			1,088	4.00	4.46	64,740
May			816	3.00	3.46	50,174
June			816	3.00	3.35	48,555
July			272	1.00	1.15	16,725
August			27	.10	.12	1,660
September			.0	.0	.0	0
October			.0	.0	.0	0
The year			503	1.85	24.97	362,000

[a] Estimated from run-off of neighboring streams.

FRESNO RIVER NEAR KNOWLES, CAL.

This station, which is located at Fresno Crossing, in the N. ½ sec. 15, T. 8 S., R. 20 E., about 6 miles northeast of Knowles, was established September 16, 1911.

Water is diverted above the station for irrigation and for use in lumbering.

The gage is a vertical staff fastened to a willow tree on the left bank about 100 feet above the bridge.

The bed of the stream is composed of small bowlders, gravel, and sand, and is fairly permanent.

Discharge measurements are made from a car and cable about 400 feet below the gage.

Discharge measurements of Fresno River near Knowles, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-ft.*
Sept. 16	J. E. Stewart	0.50	15
Nov. 10	H. J. Tompkins	.62	25
1912.			
Mar. 6	H. J. Tompkins	1.60	219
Apr. 16	J. E. Stewart	1.36	150

Daily gage height, in feet, of Fresno River near Knowles, Cal., for 1911–12.

Day.	Sept.	Day.	Sept.	Day.	Sept.	Day.	Sept.	Day.	Sept.	Day.	Sept.
1911.		1911.		1911.		1911.		1911.		1911.	
1	.....	6	.....	11	.....	16	0.50	21	.45	26	.57
2	.....	7	.....	12	.....	17	.50	22	.47	27	.55
3	.....	8	.....	13	.....	18	.51	23	.50	28	.60
4	.....	9	.....	14	.....	19	.50	24	.50	29	.52
5	.....	10	.....	15	.....	20	.45	25	.50	30	.55
										31	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	0.60	0.50	0.58	0.70	0.78	0.68	1.00	1.35	1.08
2	.60	.50	.58	.67	.78	.70	1.00	1.20	1.10
3	.57	.50	.60	.70	.78	.72	1.05	1.20	1.18
4	.60	.50	.58	.60	.80	.78	1.07	1.10	1.17
5	.57	.50	.58	.60	.75	.98	1.13	1.10	1.15
6	.58	.50	.57	.65	.75	1.50	1.05	1.10	1.15
7	.55	.55	.65	.65	.73	1.48	1.10	1.30	1.10
8	.52	.55	.65	.65	.72	1.47	1.18	1.20	1.10
9	.50	.55	.62	.70	.70	1.20	1.15	1.40	1.18
10	.55	.60	.60	.70	.70	1.08	1.32	1.20	1.17
11	.60	.90	.60	1.05	.70	1.00	1.40	1.20	1.15
12	.58	.70	.58	.80	.72	1.09	1.40	1.23	1.15
13	.55	.70	.55	.78	.70	1.28	1.30	1.25	1.12
14	.55	.68	.55	.75	.70	1.20	1.25	1.20	1.10
15	.52	.60	.57	.75	.70	1.10	1.40	1.25	1.10
16	.55	.60	.58	.75	.70	1.40	1.40	1.25	1.10
17	.55	.68	.62	.75	.72	1.20	1.30	1.25	1.10
18	.50	.65	.60	.73	.72	1.08	1.30	1.20	1.10
19	.50	.63	.60	.75	.73	1.10	1.20	1.20	1.00
20	.50	.62	.65	.75	.73	1.20	1.13	1.20	.98

Daily gage height, in feet, of Fresno River near Knowles, Cal., for 1911–12—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911-12.									
21	0.50	0.65	0.70	0.70	0.72	1.18	1.10	1.40	0.98
22	.48	.65	.60	.73	.72	1.03	1.10	1.30	.95
23	.50	.63	.60	.75	.73	1.00	1.05	1.25	1.00
24	.50	.65	.60	.75	.73	1.08	1.07	1.20	.95
25	.50	.60	.60	.75	.78	1.03	1.10	1.20	.95
26	.50	.60	.50	.80	.70	1.03	1.10	1.40	.90
27	.52	.60	.80	1.05	.68	1.05	1.20	1.15	.88
28	.52	.60	.82	.90	.67	1.00	1.10	1.12	.85
29	.50	.60	.70	.85	.67	1.00	1.05	1.10	.82
30	.50	.58	.65	.83	.....	1.10	1.50	1.12	.80
31	.50	.....	.75	.80	.....	1.05	.....	1.12	.....

Daily discharge, in second-feet, of Fresno River near Knowles, Cal., for 1911–12.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1911.		1911.		1911.	
1	.....	11	.....	21	12
2	.....	12	.....	22	14
3	.....	13	.....	23	15
4	.....	14	.....	24	15
5	.....	15	.....	25	15
6	.....	16	15	26	21
7	.....	17	15	27	19
8	.....	18	16	28	23
9	.....	19	15	29	17
10	.....	20	12	30	19

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911-12.									
1	23	15	21	34	44	32	78	150	92
2	23	15	21	31	44	34	78	116	96
3	21	15	23	34	44	37	87	116	112
4	23	15	21	23	47	44	91	96	110
5	21	15	21	23	40	75	102	96	106
6	21	15	21	28	40	189	87	96	106
7	19	19	28	28	38	184	96	138	96
8	17	19	28	28	37	181	112	116	96
9	15	19	25	34	34	116	106	162	112
10	19	23	23	34	34	92	143	116	110
11	23	62	23	87	34	78	162	116	106
12	21	34	21	47	37	94	162	123	106
13	19	34	19	44	34	134	138	127	100
14	19	32	19	40	34	116	127	116	96
15	17	23	21	40	34	96	162	127	96
16	19	23	21	40	34	162	162	127	96
17	19	32	25	40	37	116	138	127	96
18	15	28	23	38	37	92	138	116	96
19	15	26	23	40	38	96	116	116	78
20	15	25	28	40	38	116	106	116	75
21	15	28	34	34	37	112	96	162	75
22	14	28	23	38	37	83	96	138	70
23	15	26	23	40	38	78	87	127	78
24	15	28	23	40	38	92	91	116	70
25	15	23	23	40	44	83	96	116	70
26	15	23	15	47	34	83	96	162	62
27	17	23	47	87	32	87	116	106	59
28	17	23	50	62	31	78	96	100	54
29	15	23	34	54	31	78	87	96	50
30	15	21	28	52	.....	96	189	100	47
31	15	.....	40	47	.....	87	.....	100	.....

NOTE.—Daily discharge determined from a fairly well-defined rating curve.

Monthly discharge of Fresno River near Knowles, Cal., for 1911–12.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1911.					
September 16–30	23	12	16.2	482	B.
1911–12.					
October	23	14	17.8	1,090	B.
November	62	15	24.5	1,460	B.
December	50	15	25.6	1,570	B.
January	87	23	41.7	2,560	B.
February	47	31	37.3	2,150	B.
March	189	32	98.1	6,030	B.
April	189	78	115	6,840	B.
May	162	96	121	7,440	B.
June	112	47	87.2	5,190	B.
The period				34,300	

NELDER CREEK[1] NEAR FRESNO FLATS, CAL.

This station, which is located near the Salt Springs and Crane Valley highway bridge, in the SE. ¼ sec. 36, T. 6 S., R. 21 E., Mount Diablo base and meridian, 1½ miles above the junction with Lewis Fork, and about 4 miles northeast of Fresno Flats, in the Sierra National Forest, was established September 23, 1910.

The station is below all important tributaries and above all diversions. Just above the bridge water is diverted to a flume feeder of the Madera Sugar Pine Lumber Co.

The gage is a vertical staff fastened to an alder on the left bank about 400 feet above the bridge. Discharge measurements are made by wading.

There is but one channel at all stages, as both banks are high. The bed of the stream is sandy and will shift at high stages.

This station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of Nelder Creek near Fresno Flats, Cal., in 1910 and 1912.

Date.	Hydrographer.	Gage height.	Discharge
1910.		*Feet.*	*Sec.-ft.*
Sept. 23	J. E. Stewart	0.51	4.6
Nov. 5	H. J. Tompkins	.49	2.5
1912.			
Mar. 7	H. J. Tompkins	1.57	4.6

[1] Locally known as Redwood Creek. Formerly published as Fresno River near Fresno Flats. See map of Mariposa quadrangle, published July, 1912.

Daily gage height, in feet, of Nelder Creek near Fresno Flats, Cal., for 1910–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1910–11.									
1		0.5					2.0		
2								1.5	
3				0.6					
4									
5			0.7						
6					1.6			1.6	
7		.5				4.1			
8							2.0		
9									
10				1.2					1.7
11						2.1			
12			.7					1.4	
13						1.8		1.4	
14		.6		1.1					
15					1.5		1.7		
16				1.0					
17						1.8			
18									
19				.8					
20			.6		1.4	1.8		1.3	
21		.6							1.5
22					1.4		1.7		
23				1.0					1.6
24					1.4				
25				3.0					
26				1.8			1.7		
27					1.6	1.8		1.1	
28		.6	.5				1.6		
29							1.5		
30				5.7					
31				4.5		1.9			
1911–12.									
1									
2									
3									
4								1.4	
5									
6							1.4		
7						1.57			
8									
9									
10					1.0				
11				1.0					
12									
13									
14									
15				.9					
16									
17									
18									
19									
20							1.2	1.7	
21						1.1			
22									
23									1.4
24									
25									
26									
27									
28									
29									
30									
31									

NORTH FORK OF FRESNO RIVER[1] AT OLD MIAMI MILL, NEAR SUGAR PINE, CAL.

This station was established September 26, 1910, at the old mill at the Miami Creek ranger station in the Sierra National Forest, 3 miles southwest of Sugar Pine and 35 miles northwest of Raymond.

The gage is a vertical staff fastened to an alder on the left bank about 200 feet north of the ranger's station.

Discharge measurements are made by wading.

The bed of the stream, which is composed of sand and small bowlders, is smooth. Both banks are high and wooded and will not overflow.

No gage heights were observed during 1910 and no estimates of daily or monthly discharge have been prepared. No discharge measurements made in 1911.

This station is maintained in cooperation with the United States Forest Service.

Discharge measurements of North Fork of Fresno River near Sugar Pine, Cal., in 1910.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-feet.*
Sept. 21	Stewart and Tompkins	0.50	3.7
Nov. 7	H. J. Tompkins	.59	3.5
Dec. 14	.....do	.55	4.7

Daily gage height, in feet, of North Fork of Fresno River near Sugar Pine, Cal., for 1911.

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1			0.7	0.7	16				0.6
2			.7	.7	17			0.7	
3			.7	.7	18			.7	.6
4			.7	.7	19				
5			.7	.7	20				.6
6			.7	.7	21				.6
7			.7	.7	22				.65
8			.7	.65	23			.7	.65
9			.7	.7	24		0.8	.65	.6
10			.7	.65	25		.7	.65	.6
11			.7	.6	26	0.8		.65	.6
12				.6	27		.7	.7	.6
13				.6	28	.8	.7	.7	.6
14				.6	29	.7	.7	.7	.65
15					30	.8	.7		.65
					31		.7		

CHOWCHILLA CREEK AT BASE OF FOOTHILLS, NEAR BUCHANAN, CAL.

The following information regarding records of discharge of Chowchilla Creek, collected by the State Engineering Department of California, has been taken from "Physical data and statistics of California," by Wm. Ham. Hall.

[1] Known locally as Miami Creek.

The gaging station is at a point near Buchanan (about 15 miles east of Minturn), where a record of gage heights was kept for portions of the period for which estimates were made. The flow of this stream is especially characterized by sudden short freshets, many of which passed down the creek bed without being recorded. A rating curve was determined from channel dimensions and slopes which, with the gage record, form the basis of the results given below.

Monthly discharge of Chowchilla Creek at base of foothills, near Buchanan, Cal., for 1878–1884.

[Drainage area, 268 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.						
November	0	0	0	0.0	0.0	0
December	0	0	0	.0	.0	0
January	140	0	8	.03	.03	492
February	1,000	0	56	.21	.22	3,110
March	760	0	63	.24	.28	3,874
April	300	11	48	.18	.20	2,856
May	140	0	14	.05	.06	861
June	0	0	0	.0	.0	0
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year	1,000	0	15.8	.059	.79	11,200
1879–80.						
November	0	0	0	.0	.0	0
December	192	0	12	.04	.04	738
January	18	0	5	.02	.02	307
February	1,500	0	167	.62	.67	9,606
March	91	11	19	.07	.08	1,168
April	6,380	0	1,266	4.72	5.26	75,332
May [a]	.....	.....	53	.20	.23	3,259
June [a]	.....	.....	27	.10	.11	1,607
July [a]	0	0	0	.0	.0	0
August [a]	0	0	0	.0	.0	0
September [a]	0	0	0	.0	.0	0
October [a]	0	0	0	.0	.0	0
The year	6,380	0	129	.482	6.41	92,000
1880–81.[a]						
November	0	0	0	.0	.0	0
December	.....	.....	201	.75	.86	12,359
January	.....	.....	295	1.10	1.27	18,139
February	.....	.....	375	1.40	1.46	20,826
March	.....	.....	83	.31	.36	5,103
April	.....	.....	11	.04	.04	655
May	0	0	0	.0	.0	0
June	0	0	0	.0	.0	0
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year	.....	.....	80.4	.30	3.99	57,100
1881–82.						
November [a]	0	0	0	.0	.0	0
December [a]	.....	.....	27	.10	.12	1,660
January [a]	.....	.....	54	.20	.23	3,320
February	1,120	0	164	.61	.64	9,108
March	10,770	0	1,168	4.36	5.02	71,818
April [a]	.....	.....	268	1.00	1.12	15,947
May [a]	.....	.....	54	.20	.23	3,320
June [a]	0	0	0	.0	.0	0

[a] Estimated from the run-off of neighboring streams and from previous measurements.

Monthly discharge of Chowchilla Creek at base of foothills, near Buchanan, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1881–82.						
July [a]	0	0	0	0.0	0.0	0
August [a]	0	0	0	.0	.0	0
September [a]	0	0	0	.0	.0	0
October [a]	0	0	0	.0	.0	0
The year			145	.540	7.36	105,000
1882–83.[a]						
November			53	.20	.22	3,154
December			27	.10	.12	1,660
January			80	.30	.35	4,919
February			53	.20	.21	2,943
March			268	1.00	1.15	16,479
April			134	.50	.56	7,974
May			107	.40	.46	6,579
June	0	0	0	.0	.0	0
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year			60.2	.225	3.07	43,700
1883–84.[a]						
November	0	0	0	.0	.0	0
December	0	0	0	.0	.0	0
January			27	.10	.12	1,660
February			1,340	5.00	5.39	77,078
March			1,608	6.00	6.92	98,872
April			1,072	4.00	4.46	63,788
May			804	3.00	3.46	49,436
June			804	3.00	3.35	47,841
July			268	1.00	1.15	16,479
August			27	.10	.12	1,660
September			0	.0	.0	0
October			0	.0	.0	0
The year			496	1.85	24.97	357,000

[a] Estimated from run-off of neighboring streams and from previous measurements.

MARIPOSA CREEK AT BASE OF FOOTHILLS, MARIPOSA COUNTY, CAL.

The method of determining the discharge of Mariposa Creek by the State engineering department of California is the same as and is included under the same heading as that for Bear Creek.[1] The Bear Creek description, however, does not seem strictly applicable to Mariposa Creek, in view of the fact that the records for the latter are apparently estimates based on the discharge of Bear Creek, although it is possible that fragmentary gage-height records were obtained on Mariposa Creek.

[1] Hall, W. H., Physical data and statistics of California, p. 408.

Monthly discharge of Mariposa Creek at base of foothills, Mariposa County, Cal., for 1878–1884.[a]

[Drainage area, 122 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.						
November	0	0	0	0.0	0.0	0
December	0	0	0	.0	.0	0
January	0	0	0	.0	.0	0
February	.....	0	20	.16	.17	1,111
March	.....	.....	45	.37	.43	2,767
April	.....	.....	43	.35	.39	2,559
May	.....	0	4	.03	.03	246
June	0	0	0	.0	.0	0
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year	.....	.....	9.3	.076	1.02	6,680
1879–80.						
November	0	0	0	.0	.0	0
December	.....	.....	15	.12	.14	922
January	.....	.....	20	.16	.18	1,230
February	.....	.....	49	.40	.43	2,819
March	.....	.....	24	.20	.23	1,476
April	.....	.....	24	.20	.22	1,428
May	.....	.....	18	.15	.17	1,107
June	.....	.....	12	.10	.11	714
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year	.....	.....	13.5	.111	1.48	9,700
1880–81.						
November	0	0	0	.0	.0	0
December	.....	0	92	.75	.86	5,657
January	.....	.....	134	1.10	1.27	8,239
February	.....	.....	171	1.40	1.46	9,497
March	.....	.....	38	.31	.36	2,337
April	.....	0	5	.04	.04	298
May	0	0	0	.0	.0	0
June	0	0	0	.0	.0	0
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year	.....	.....	36.7	.300	3.99	26,000
1881–82.						
November	0	0	0	.0	.0	0
December	0	0	0	.0	.0	0
January	0	0	0	.0	.0	0
February	.....	0	24	.20	.21	1,333
March	.....	.....	74	.61	.70	4,550
April	.....	0	98	.80	.89	5,831
May	0	0	0	.0	.0	0
June	0	0	0	.0	.0	0
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year	.....	.....	16.3	.134	1.80	11,700

[a] The entire record is estimated from the run-off of neighboring streams.

Monthly discharge of Mariposa Creek at base of foothills, Mariposa County, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1882–83.						
November		0	18	0.15	0.17	1,071
December			12	.10	.12	738
January			49	.40	.46	3,013
February			24	.20	.21	1,333
March			122	1.00	1.15	7,501
April			73	.60	.67	4,344
May		0	37	.30	.35	2,275
June	0	0	0	.0	.0	0
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year			27.9	.229	3.13	20,300
1883–84.						
November	0	0	0	.0	.0	0
December	0	0	0	.0	.0	0
January		0	12	.10	.12	738
February			488	4.00	4.31	28,070
March			671	5.50	6.34	41,258
April			488	4.00	4.46	29,037
May			244	2.00	2.31	15,003
June			122	1.00	1.12	7,259
July		0	49	.40	.46	3,013
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year			173	1.42	19.12	124,000

BEAR CREEK AT BASE OF FOOTHILLS, MERCED COUNTY, CAL.

The following information regarding records of discharge of Bear Creek, collected by the Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

Bear Creek is a small stream whose watershed does not extend back to regions of perennial snows. Its discharge is characterized by sudden rises after heavy rains, with periods of low flow intervening. The rating curve for this stream is based on cross-sectional dimensions and slope. For several seasons gage-height[1] records were obtained. For the remainder of the period 1878–1884 discharge was determined from ratios obtained by intercomparison of the discharges per square mile of near-by streams with Bear Creek.

[1] No information available regarding location of gage.

Monthly discharge of Bear Creek at base of foothills, Merced County, Cal., for 1878–1884.

[Drainage area, 166 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.						
November	0	0	0	0.0	0.0	0
December	0	0	0	.0	.0	0
January	0	0	0	.0	.0	0
February	312	0	25	.15	.16	1,388
March	570	0	57	.34	.39	3,505
April	197	5	54	.33	.37	3,213
May	0	0	0	.0	.0	0
June	0	0	0	.0	.0	0
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year	570	0	11.3	.068	.92	8,010
1879–80.						
November	0	0	0	.0	.0	0
December	257	0	18	.11	.13	1,107
January	217	0	25	.15	.17	1,537
February	200	0	61	.37	.40	3,509
March	85	10	31	.19	.22	1,906
April	2,080	25	321	1.93	2.15	19,101
May	47	0	23	.14	.16	1,414
June	0	0	0	.0	.0	0
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year	2,080	0	39.9	.24	3.23	28,600
1880–81.						
November	0	0	0	.0	.0	0
December	421	0	115	.69	.80	7,071
January	1,920	20	169	1.02	1.18	10,391
February	1,423	47	214	1.29	1.34	11,885
March	197	13	48	.29	.33	2,951
April	20	0	6	.04	.04	357
May	0	0	0	.0	.0	0
June	0	0	0	.0	.0	0
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year	1,920	0	46	.278	3.69	32,700
1881–82.						
November	0	0	0	.0	.0	0
December	0	0	0	.0	.0	0
January [a]	0	0	0	.0	.0	0
February [a]	.....	.....	33	.20	.21	1,833
March [a]	.....	.....	100	.60	.69	6,149
April [a]	.....	.....	130	.78	.87	7,736
May [a]	0	0	0	.0	.0	0
June [a]	0	0	0	.0	.0	0
July [a]	0	0	0	.0	.0	0
August [a]	0	0	0	.0	.0	0
September [a]	0	0	0	.0	.0	0
October [a]	.....	.....	17	.10	.12	1,045
The year	.....	.....	23.3	.141	1.89	16,800

[a] Estimated from run-off of neighboring streams and from previous measurements.

Monthly discharge of Bear Creek at base of foothills, Merced County, Cal., for 1878–1884— Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1882–83.[a]						
November			25	0.15	0.17	1,488
December			17	.10	.12	1,045
January			66	.40	.46	4,058
February			33	.20	.21	1,833
March			170	1.02	1.18	10,453
April			100	.60	.67	5,950
May			50	.30	.35	3,074
June	0	0	0	.0	.0	0
July	0	0	0	.0	.0	0
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year			38.4	.231	3.16	27,900
1883–84.[a]						
November	0	0	0	.0	.0	0
December	0	0	0	.0	.0	0
January			17	.10	.12	1,045
February			660	3.98	4.29	37,964
March			910	5.48	6.32	55,954
April			660	3.98	4.44	39,273
May			330	1.99	2.29	20,291
June			170	1.02	1.14	10,116
July			66	.40	.46	4,058
August	0	0	0	.0	.0	0
September	0	0	0	.0	.0	0
October	0	0	0	.0	.0	0
The year			234	1.41	19.06	169,000

[a] Estimated from run-off of neighboring streams and from previous measurements.

MERCED RIVER AT YOSEMITE, CAL.

This station, which is located at the highway bridge at Yosemite, about 2 miles below the mouth of Tenaya Creek and three-fourths of a mile above the mouth of Yosemite Creek, was established January 4, 1912. An incomplete record of stage of the Merced at this point was kept from July, 1904, to June, 1909.

The drainage area above the station comprises 236 square miles.

The gage is a vertical staff fastened to the retaining wall on the left bank just below the bridge.

The bed of the stream is composed of small bowlders and gravel and will shift slightly at high stages.

Discharge measurements are made from the downstream side of the bridge.

The relation between gage height and discharge during the winter months is slightly affected by ice. The results are good.

Gage-height record has been furnished by officials of the Yosemite National Park.

Discharge measurements of Merced River at Yosemite, Cal., for 1904–1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
1904.			
July 11	A. E. Chandler	4.60	555
18	N. W. Currie	4.39	431
1905.			
June 6	W. B. Clapp	6.15	1,421
8	do	6.45	1,617
11	N. W. Currie	6.95	2,289
12	do	7.52	2,751
20	do	6.92	2,240
25	do	6.0	1,354
28	do	5.7	1,221
July 4	do	5.4	984
13	do	4.8	647
17	do	4.2	365
31	do	3.78	190
Aug. 25	do	3.4	91
Oct. 24	do	3.1	153
1906.			
May 24	W. B. Clapp	6.8	1,760
Nov. 8	C. W. Tucker	3.3	50
1907.			
May 1	C. W. Tucker	6.85	1,790
1907.			
May 19	C. W. Tucker	8.85	3,120
23	Martin and Tucker	6.9	1,820
25	W F. Martin	7.34	2,200
31	C. W. Tucker	9.0	3,610
June 24	do	7.5	2,020
July 29	do	6.5	1,460
Aug. 23	do	4.4	365
1908.			
Aug 4	Tucker and Hardy	4.2	336
16	W. V. Hardy	3.5	123
Sept. 30	C. W. Tucker	3.2	49
1909.			
June 27	W. V. Hardy	7.8	2,730
1911.			
July 16	G. T. Peekema	7.15	2,550
Aug. 18	H. J. Tompkins	3.35	269
1912.			
Jan. 5	J. E. Stewart	2.38	19
June 17	F. C. Ebert	4.86	1,050

Daily gage height, in feet, of Merced River at Yosemite, Cal., for 1904–1912.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1904.				1904.			
1	.....	4.20	3.45	16	4.30	4.05	3.60
2	.....	4.45	3.40	17	4.30	4.00	3.60
3	.....	4.10	3.40	18	4.40	3.90	3.60
4	.....	4.10	3.40	19	4.50	3.75	3.50
5	.....	4.40	3.35	20	4.50	3.75	3.45
6	.....	4.60	3.35	21	4.48	3.70	3.40
7	.....	4.30	4.30	22	4.70	3.60	3.40
8	.....	4.10	4.30	23	4.60	3.55	3.50
9	.....	4.00	3.30	24	4.48	3.55	4.20
10	.....	3.90	3.30	25	4.40	3.50	.....
11	4.60	3.90	3.30	26	4.40	3.50	.....
12	4.70	3.80	3.30	27	4.35	3.55	.....
13	4.57	3.75	3.30	28	4.25	3.60	.....
14	4.50	3.80	3.30	29	4.10	3.55	.....
15	4.40	4.15	3.35	30	4.00	3.50	.....
				31	4.00	3.48	.....

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1905.						1905.					
1	.....	6.2	5.5	3.7	3.3	16	.....	7.4	4.3	3.5	3.1
2	.....	6.2	5.5	3.7	3.3	17	.....	7.1	4.2	3.5	3.1
3	.....	6.1	5.3	3.7	3.3	18	.....	6.9	4.15	3.5	3.1
4	.....	5.95	5.4	3.7	3.25	19	.....	6.8	4.2	3.45	3.15
5	.....	5.8	5.35	3.65	3.2	20	.....	6.9	4.2	3.45	3.2
6	.....	6.2	5.35	3.6	3.2	21	.....	7.1	4.2	3.45	3.2
7	.....	6.5	5.3	3.6	3.2	22	.....	7.0	4.2	3.45	3.2
8	.....	6.4	5.25	3.6	3.2	23	6.8	6.5	4.2	3.45	3.3
9	.....	6.2	5.5	3.7	3.2	24	6.8	6.5	4.2	3.4	3.3
10	.....	6.55	5.5	3.7	3.2	25	7.1	6.0	4.1	3.4	3.3
11	.....	7.0	5.3	3.7	3.2	26	7.1	6.0	4.1	3.35	3.3
12	.....	7.5	5.1	3.6	3.15	27	6.3	5.8	4.1	3.3	3.3
13	.....	7.45	4.8	3.6	3.1	28	.....	5.7	4.0	3.3	3.4
14	.....	7.35	4.5	3.5	3.1	29	5.7	5.95	3.9	3.3	3.4
15	.....	7.3	4.35	3.5	3.1	30	6.1	5.8	3.8	3.3	3.35
						31	6.1	.....	3.8	3.3	.....

Daily gage height, in feet, of Merced River at Yosemite, Cal., for 1904–1912—Continued.

Day.	Oct.	May.	June.	July.	Aug.	Sept.	Day.	Oct.,	May.	June.	July.	Aug.	Sept.
1905–6.							1905–6.						
1	3.3	.....	6.0	9.4	6.2	4.3	16	.....	.....	10.0	8.5	5.1	3.8
2	.....	.....	6.1	9.5	6.0	4.3	17	.....	.....	9.5	8.3	5.1	3.7
3	3.25	.....	6.75	9.8	6.0	4.2	18	.....	.....	9.2	7.8	5.4	3.7
4	.....	.....	6.8	9.5	5.8	4.2	19	.....	.....	9.8	7.7	5.5	3.6
5	.....	.....	7.4	9.6	5.7	4.1	20	.....	.....	9.8	7.8	5.2	3.6
6	.....	.....	6.45	9.5	5.6	4.1	21	3.1	.....	10.0	7.7	4.9	3.5
7	3.25	.....	6.5	9.5	5.6	4.1	22	.....	.....	9.9	7.8	4.8	3.6
8	.....	.....	7.0	9.1	5.6	4.0	23	.....	7.00	9.8	7.8	4.5	3.6
9	.....	.....	7.8	9.1	5.6	4.0	24	3.1	6.75	9.8	7.8	4.4	3.6
10	3.2	.....	8.0	8.7	5.7	4.0	25	.....	6.80	10.0	7.7	4.4	3.6
11	.....	.....	9.55	8.6	5.8	4.0	26	.....	6.8	8.8	8.1	4.4	3.6
12	3.2	.....	9.5	8.8	5.6	3.9	27	.....	6.3	8.4	7.4	4.4	3.5
13	.....	.....	9.6	9.0	5.4	3.9	28	.....	6.1	7.8	7.1	4.4	3.5
14	3.15	.....	9.2	8.8	5.3	3.9	29	.....	5.7	8.0	6.7	4.4	3.5
15	3.15	.....	9.1	8.3	5.2	3.9	30	.....	5.7	8.4	6.4	4.3	3.5
							31	.....	5.7	.....	6.4	4.3	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.												
1	3.5	3.3	3.2	3.6	.....	.....	.....	6.9	8.8	8.6	6.3	3.9
2	3.5	3.3	3.2	.....	.....	.....	.....	7.0	9.0	8.7	6.2	3.9
3	3.6	3.3	3.2	3.6	4.1	.....	.....	7.2	9.1	8.6	6.1	3.9
4	3.6	3.4	3.2	.....	.....	3.9	.....	6.9	9.0	8.8	6.0	3.9
5	3.5	3.5	3.2	.....	.....	.....	.....	6.7	8.6	9.0	5.8	3.9
6	3.5	3.3	3.2	.....	.....	4.2	.....	6.6	8.1	8.9	5.6	3.9
7	3.6	3.3	3.2	.....	4.2	4.1	.....	6.8	7.7	8.8	5.4	3.9
8	3.5	3.3	3.2	3.6	.....	4.0	.....	6.4	7.5	8.4	5.3	3.9
9	3.5	3.3	3.2	.....	.....	.....	.....	6.8	7.2	8.0	5.2	3.9
10	3.5	3.3	3.2	.....	.....	.....	.....	7.3	7.4	7.9	5.0	3.9
11	3.4	3.3	3.2	3.6	.....	.....	.....	7.4	7.4	7.8	4.9	3.9
12	3.4	3.3	.....	.....	.....	4.0	.....	7.3	7.6	7.7	4.9	3.9
13	3.5	3.3	.....	.....	.....	.....	.....	6.3	6.9	7.6	4.9	3.9
14	3.4	3.3	.....	.....	4.1	3.9	.....	6.2	6.5	7.4	4.9	3.9
15	3.4	3.3	.....	.....	.....	.....	.....	7.0	6.3	7.3	5.0	3.9
16	3.4	3.3	.....	.....	.....	.....	.....	7.5	6.4	7.2	4.9	3.8
17	3.3	3.3	.....	.....	4.1	5.8	.....	7.9	6.5	7.0	4.9	3.7
18	3.4	3.3	.....	.....	.....	6.8	.....	8.0	6.6	6.9	4.8	3.7
19	3.3	3.3	.....	.....	.....	7.3	.....	8.9	7.2	6.9	4.8	3.7
20	3.3	3.3	.....	.....	4.0	6.6	.....	8.4	7.4	6.9	4.7	3.6
21	3.3	3.3	.....	.....	.....	5.6	.....	8.0	7.6	6.8	4.6	3.6
22	3.3	3.3	.....	3.6	.....	.....	.....	7.8	7.7	6.6	4.5	3.5
23	3.3	3.3	.....	.....	4.1	.....	.....	6.9	7.6	.....	4.4	3.5
24	3.3	3.3	.....	.....	.....	4.9	.....	7.2	7.5	.....	4.4	3.5
25	3.3	3.3	.....	.....	.....	.....	.....	7.4	8.0	.....	4.3	3.5
26	3.3	3.2	.....	.....	4.1	4.7	.....	7.4	8.1	6.7	4.3	3.5
27	3.3	3.2	.....	3.6	.....	.....	.....	8.0	8.3	6.7	4.3	3.5
28	3.3	3.2	.....	4.1	.....	4.5	.....	8.1	8.4	6.8	4.2	3.4
29	3.3	3.2	.....	3.9	.....	4.4	.....	8.0	8.2	6.5	4.2	3.4
30	3.2	3.2	.....	.....	.....	.....	.....	8.4	8.8	6.4	4.0	3.4
31	3.2	.....	.....	3.8	.....	4.6	.....	9.1	.....	6.4	3.9	.....
1907–8.												
1	.....	.....	.....	.....	.....	.....	.....	.....	5.9	4.7	4.4	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	5.7	4.7	4.4	.....
3	.....	.....	.....	.....	.....	.....	.....	5.2	5.4	4.7	4.3	.....
4	.....	.....	.....	3.7	.....	.....	.....	5.3	5.3	4.7	4.2	.....
5	.....	.....	.....	.....	.....	.....	.....	5.5	5.2	4.8	.....	.....
6	.....	3.5	.....	.....	.....	.....	.....	5.7	5.1	4.7	.....	.....
7	3.4	.....	3.3	.....	.....	.....	.....	5.3	5.2	4.7	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	5.2	5.2	4.6	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	5.2	5.4	4.5	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	5.2	5.5	4.5	.....	.....
11	.....	.....	.....	3.6	.....	.....	.....	5.1	5.6	4.4	.....	.....
12	.....	3.4	.....	.....	.....	.....	.....	5.1	5.6	4.4	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	5.0	5.7	4.3	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	5.0	5.7	4.2	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	5.0	5.7	4.2	.....	.....

Daily gage height, in feet, of Merced River at Yosemite, Cal., for 1904–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907–8.												
16	3.4	.....	3.8	.....	.....	.....	.....	5.2	5.6	4.1	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	5.4	5.6	4.1	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	5.4	5.5	4.0	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	5.3	5.5	4.0	.....	.....
20	.....	.....	.....	3.6	.....	.....	.....	5.1	5.4	4.0	.....	.....
21	.....	3.1	3.7	.....	.....	.....	.....	5.2	5.3	4.0	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	5.2	5.3	3.9	.....	.....
23	.....	.....	.....	.....	.....	.....	.....	5.5	5.1	3.9	.....	.....
24	3.5	.....	.....	.....	.....	.....	.....	5.9	5.1	3.9	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	6.0	5.0	3.8	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	6.1	4.9	3.8	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	6.1	4.8	3.8	.....	.....
28	3.9	.....	.....	.....	.....	.....	.....	6.3	4.8	3.8	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	6.5	4.8	3.8	.....	.....
30	.....	3.1	.....	.....	.....	.....	.....	6.2	4.7	4.6	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	6.0	.....	4.5	.....	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1908–9.									
1	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	3.0	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	4.0	.....	.....	.....
4	.....	.....	3.1	.....	4.0	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	5.0	.....	.....	.....	.....	.....
7	3.0	.....	.....	.....	.....	.....	.....	8.0	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	4.6	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	4.9	.....	.....
14	.....	3.0	.....	5.8	3.8	4.2	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	3.2	.....	.....	.....	.....	.....	.....	.....	.....
17	3.2	.....	.....	.....	3.9	.....	.....	.....	.....
18	.....	.....	2.9	.....	.....	.....	6.0	.....	.....
19	.....	2.9	.....	4.2	.....	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	6.9	.....
21	.....	.....	.....	.....	.....	4.3	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	6.4	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	.....	3.0	.....	.....	.....	.....	.....	.....	.....
27	3.0	.....	.....	3.9	.....	.....	.....	.....	7.8
28	.....	.....	3.0	.....	4.1	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	6.6	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.
1912.							1912.						
1	.....	2.61	2.58	2.99	3.35	7.60	16	2.50	2.59	2.81	3.10	6.30	4.90
2	.....	2.64	2.57	3.09	3.31	8.00	17	2.50	2.62	2.83	3.10	6.40	4.80
3	.....	2.68	2.57	3.10	3.30	7.70	18	2.50	2.66	2.80	3.10	6.80	4.90
4	2.38	2.60	2.60	3.10	3.39	7.60	19	2.51	2.64	2.80	3.10	6.80	5.00
5	2.38	2.68	2.65	3.10	3.45	7.40	20	2.51	2.61	2.81	3.10	5.30	5.90
6	2.38	2.65	2.79	3.14	3.40	7.70	21	2.52	2.61	2.81	3.10	4.80	4.50
7	2.40	2.60	2.79	3.25	3.80	7.00	22	2.52	2.61	2.81	3.10	4.40	4.30
8	2.40	2.60	2.75	3.25	3.80	6.20	23	2.53	2.60	2.81	3.00	4.50	3.95
9	2.40	2.60	2.65	3.25	4.00	5.40	24	2.51	2.48	2.89	3.19	4.50	3.70
10	2.40	2.60	2.75	3.25	4.00	5.60	25	2.51	2.48	2.89	3.18	4.70	3.65
11	2.45	2.62	2.70	3.19	4.60	5.70	26	2.52	2.50	2.90	3.20	4.80	3.70
12	2.48	2.61	2.68	3.10	5.40	5.70	27	2.58	2.51	2.90	3.22	5.20	3.75
13	2.48	2.58	2.70	3.10	5.40	5.30	28	2.58	2.55	2.90	3.25	6.20	3.80
14	2.50	2.58	2.80	3.09	5.80	5.10	29	2.60	2.58	3.00	3.32	7.30	3.70
15	2.50	2.57	2.80	3.08	6.20	4.90	30	2.61	.....	2.92	3.28	6.90	3.70
							31	2.61	.....	2.89	.....	7.20	.....

Rating tables for Merced River at Yosemite, Cal.

July 11, 1904, to Dec. 31, 1905.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
3.10	15	4.10	326	5.10	815	6.20	1,505
3.20	38	4.20	368	5.20	870	6.40	1,645
3.30	63	4.30	412	5.30	925	6.60	1,795
3.40	90	4.40	457	5.40	985	6.80	1,950
3.50	118	4.50	504	5.50	1,045	7.00	2,110
3.60	147	4.60	552	5.60	1,105	7.20	2,275
3.70	178	4.70	602	5.70	1,170	7.40	2,445
3.80	212	4.80	653	5.80	1,235		
3.90	248	4.90	706	5.90	1,300		
4.00	286	5.00	760	6.00	1,365		

NOTE.—This table is based on 12 discharge measurements made during 1904–5. It is well defined between gage heights 3.1 feet and 6.5 feet.

Jan. 1, 1906, to Dec. 31, 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
2.90	10	4.10	272	5.30	836	7.00	1,920
3.00	20	4.20	310	5.40	890	7.20	2,070
3.10	32	4.30	350	5.50	946	7.40	2,220
3.20	46	4.40	392	5.60	1,002	7.60	2,370
3.30	62	4.50	436	5.70	1,060	7.80	2,530
3.40	80	4.60	482	5.80	1,120	8.00	2,690
3.50	100	4.70	530	5.90	1,180	8.20	2,850
3.60	122	4.80	578	6.00	1,240	8.40	3,010
3.70	146	4.90	628	6.20	1,370	8.60	3,170
3.80	173	5.00	678	6.40	1,500	8.80	3,340
3.90	203	5.10	730	6.60	1,640	9.00	3,510
4.00	236	5.20	782	6.80	1,780	10.00	4,380

NOTE.—This table is not applicable for periods during which ice was present or the channel was otherwise obstructed. It is based on discharge measurements made during 1906 to 1908 and the form of the previous curve. Above gage height 3.3 feet, the table is fairly well defined; below gage height 3.3 feet it is approximate.

Monthly discharge of Merced River at Yosemite, Cal., for 1904–1908.

[Drainage area, 236 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1904.							
July 11–31	602	286	463	1.96	1.53	19,280	
August	552	112	248	1.05	1.21	15,250	
September 1–24	412	63	131	.556	.50	6,236	
1905.							
May 23–31	2,190	1,170	1,696	7.19	2.41	30,280	
June	2,530	1,170	1,771	7.50	8.37	105,400	
July	1,170	212	610	2.58	2.97	37,510	
August	178	63	123	.521	.60	7,563	
September	90	15	44.4	.188	.21	2,642	
1905–6.							
October 1–24	63	15	35.3	0.150	0.10	1,680	
May 23–31	1,920	1,060	1,460	6.19	2.07	26,100	
June	4,380	1,240	3,140	13.3	14.84	187,000	
July	4,200	1,500	2,980	12.6	14.53	183,000	
August	1,370	350	790	3.35	3.86	48,600	
September	350	100	190	.805	.90	11,300	

Monthly discharge of Merced River at Yosemite, Cal., for 1904–1908—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1906–7.							
October	122	46	80.1	0.339	0.39	4,930	
November	100	46	61.2	.259	.29	3,640	
December			71.7	.304	.35	4,410	
January			153	.648	.75	9,410	
February			272	1.15	1.20	15,100	
March			576	2.48	2.81	35,400	
May	3,600	1,370	2,250	9.53	10.99	138,000	
June	3,600	1,440	2,480	10.5	11.71	148,000	
July	3,510	1,500	2,290	9.70	11.18	141,000	
August	1,440	203	664	2.81	3.24	40,800	
September	203	80	158	.670	.75	9,400	
1907–8.							
October			116	.492	.57	7,130	D.
November			61.0	.258	.29	3,630	D.
December			127	.538	.62	7,810	D.
January			130	.551	.64	7,990	D.
May	1,570	678	935	3.96	4.56	57,500	A.
June	1,180	530	851	3.61	4.03	50,600	A.
July	578	173	347	1.47	1.70	21,300	B.
1908.							
October			33.0	.140	0.16	2,030	D.
November			17.5	.074	.08	1,040	D.
December			30.7	.130	.15	1,890	D.

NOTE.—Discharge interpolated Dec. 12–31, 1906, and for days when gage was not read in March, 1907. For January, February, and October to December, 1907, and January and October to December, 1908, the mean of days when record was obtained was taken as the mean for the month. No allowance was made for possible ice conditions during the winter months.

MERCED RIVER NEAR MERCED FALLS, CAL.

This station, which is located in the NW. ¼ sec. 11, T. 5 S., R. 15 E., about 2 miles above the dam at Merced Falls, was established April 6, 1901.

No important tributaries enter for 25 miles above or below the station.

The water diverted for power development above the station returns to the river. Below Merced Falls, however, the combined capacity of irrigating canals in the vicinity of Snelling exceeds the low-water flow. All acquired water rights above Merced Falls are for power or mining development.

The staff gage, the datum of which has not been changed since the station was established, is in several sections on the right bank.

Discharge measurements are made from a cable near the gage.

The flow at the station is doubtless somewhat affected at times by artificial regulation at some of the power dams, several miles above, but pondage from the dam at Merced Falls probably has no appreciable effect at the station. Both banks are high and rocky and not subject to overflow. The bed of the stream at the station is composed of gravel and is subject to some changes at high water. The velocity is also very great at flood stages.

The record is excellent for later years and fairly good for earlier years.

Discharge measurements of Merced River near Merced Falls, Cal., in 1895–1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-feet.*
1895.			
Nov. 27	J. B. Lippincott		125
1900.			
Sept. 10	S. G. Bennett		63
1901.			
Apr. 6	S. G. Bennett	10.3	1,379
June 11	do	12.0	4,139
Aug. 2	J. B. Lippincott	10.05	1,123
31	S. G. Bennett	8.6	220
1902.			
Mar. 6	S. G. Bennett	10.1	1,302
May 13	do	12.15	5,413
Sept. 3	L. M. Lawson	8.1	109
1903.			
Feb. 9	S. G. Bennett	9.80	771
Apr. 26	H. H. Henderson	11.48	2,945
May 24	do	10.55	2,106
June 7	do	12.10	3,409
21	do	10.62	2,174
July 5	do	9.50	1,204
19	do	8.80	606
Aug. 4	do	8.40	503
23	do	8.00	339
Sept. 15	do	7.90	293
27	do	7.70	269
Oct. 4	do	7.80	289
18	do	7.80	285
Nov. 11	do	7.90	292
1904.			
Jan. 10	H. H. Henderson	8.20	239
24	do	8.15	204
Feb. 4	do	8.20	199
25	do	11.62	3,457
28	do	11.50	3,268
Mar. 6	do	9.80	1,203
29	do	12.25	4,683
Apr. 20	do	11.80	3.357
May 29	do	12.80	5.424
June 16	do	11.60	3,165
July 1	do	10.20	1,414
Aug. 7	do	8.35	214
23	O. W. Peterson	8.32	209
28	H. H. Henderson	8.20	182
Sept. 12	do	7.90	74
27	do	9.50	928
Oct. 9	do	11.90	3,516
23	do	9.50	995
Nov. 25	do	8.60	314
Dec. 4	do	8.60	303
1905.			
Mar. 16	F. R. S. Buttemer	10.19	1,269
Apr. 7	O. W. Peterson	10.75	2,263
May 24	R. S. Hawley	11.91	4,261
June 17	do	11.65	3,632
July 21	do	9.04	490
Sept. 14	C. H. Lee	7.82	56
Oct. 19	Hawley and Lee	7.80	48
19	do	7.80	51
Dec. 7	Hawley and Eaton	8.00	90
1906.			
Jan. 27	C. H. Lee	9.40	710
Feb. 17	do	9.50	833
Mar. 31	do	14.80	12,700
31	do	14.50	11,000
Apr. 1	do	13.20	7,680
26	R. S. Hawley	11.42	3,000
May 16	C. H. Lee	12.60	5,660
27	W. C. Sawyer	13.15	6,960
28	do	16.40	17,300
May 28	W. C. Sawyer	16.20	16,000
28	do	16.00	15,200
28	do	15.90	14,900
June 6	do	12.42	4,860
16	do	14.50	11,000
22	do	14.75	11,000
30	do	13.48	7,270
July 12	do	13.56	6,350
13	do	13.68	6,980
20	do	12.15	4,210
21	do	11.85	4,040
Aug. 2	do	10.38	1,510
4	do	10.30	1,430
5	do	10.24	1,350
19	W. F. Martin	9.85	917
Sept. 6	do	8.90	322
Nov. 20	do	8.42	145
1907.			
Apr. 30	W. F. Martin	12.64	6,280
May 27	do	12.85	7,600
31	do	13.76	10,300
June 1	do	14.23	11,600
July 6	do	12.40	5,400
8	W. V. Hardy	12.40	5,560
9	do	12.12	4,960
10	do	11.75	4,350
11	do	11.57	3,760
15	do	11.44	3,550
17	do	11.22	3,080
20	do	10.90	2,540
22	do	10.75	2,340
23	do	10.50	1,990
29	W. A. Lamb	10.50	2,070
30	do	10.45	1,740
31	do	10.30	1,580
Aug. 5	do	10.00	1,250
11	do	9.57	806
Sept. 23	do	8.31	146
1908.			
Mar. 2	W. F. Martin	10.00	1,230
May 2	W. A. Lamb	11.45	3,600
June 17	W. F. Martin	10.06	1,290
Sept. 12	W. V. Hardy	8.16	102
1909.			
May 17	W. F. Martin	12.15	4,510
June 3	do	14.35	10,400
July 18	W. V. Hardy	9.98	1,160
Aug. 2	do	9.00	429
22	do	8.60	254
Nov. 4	do	8.23	122
1910.			
Feb. 4	J. E. Stewart	9.87	1,150
Apr. 2	do	10.69	2,100
May 16	do	12.56	5,340
June 30	do	9.25	658
July 16	W. V. Hardy	8.76	316
Aug. 25	J. E. Stewart	8.30	149
26	do	7.72	24
1911.			
Feb. 18	J. E. Stewart	10.51	1,750
May 13	do	12.54	5,120
June 13	W. V. Hardy	15.00	11,100
July 27	J. E. Stewart	10.51	1,370
Sept. 18	do	8.27	124
1912.			
Apr. 14	J. E. Stewart	10.18	891
May 30	do	12.94	5,160
July 14	do	9.39	505

Daily gage height, in feet, of Merced River near Merced Falls, Cal., for 1901–1912.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1901.							1901.						
1	.....	11.6	13.1	12.2	10.1	8.6	16	10.8	13.8	12.3	10.6	9.2	8.3
2	.....	11.4	13.4	12.0	10.0	8.6	17	10.9	14.0	12.2	10.5	9.2	8.3
3	.....	11.2	13.4	11.9	10.3	8.6	18	11.0	13.7	12.6	10.4	9.4	8.3
4	.....	11.3	13.6	11.4	10.4	8.5	19	11.4	13.3	12.7	10.4	9.4	8.2
5	.....	11.6	13.4	11.2	10.6	8.5	20	11.6	12.8	12.3	10.4	9.3	8.2
6	10.3	11.8	13.2	11.2	10.8	8.4	21	11.7	12.3	12.6	10.4	9.1	8.2
7	10.3	12.2	13.2	11.2	10.3	8.4	22	11.8	12.1	13.0	10.4	9.0	8.3
8	10.1	12.5	13.2	11.1	10.0	8.4	23	11.8	12.1	12.6	10.5	8.9	8.4
9	10.1	12.8	12.8	11.1	9.8	8.4	24	11.8	12.0	12.3	10.5	8.9	8.6
10	10.0	13.2	12.4	11.0	9.7	8.4	25	12.2	11.8	11.9	10.4	8.8	8.7
11	10.1	13.4	12.1	10.8	9.6	8.4	26	11.9	11.6	11.7	10.3	8.8	8.7
12	10.1	13.7	12.0	10.8	9.4	8.4	27	11.9	11.5	11.6	11.2	8.6	8.7
13	10.5	13.8	11.9	10.8	9.3	8.3	28	11.9	11.5	11.9	10.2	8.6	8.6
14	10.7	13.7	11.6	10.8	9.2	8.3	29	11.6	11.6	12.4	10.0	8.6	8.6
15	10.8	13.7	11.8	10.6	9.2	8.3	30	12.4	11.9	12.3	10.1	8.6	8.6
							31	.....	12.6	.....	10.0	8.6	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901–2.												
1	8.8	9.4	9.3	8.6	8.4	10.5	9.7	10.8	11.6	10.0	8.7	8.1
2	8.9	9.3	9.2	8.7	8.5	12.3	9.8	10.8	11.4	9.9	8.7	8.0
3	8.9	9.2	9.2	9.1	8.5	11.0	9.7	10.9	11.3	9.8	8.6	8.1
4	8.8	9.1	10.5	8.9	8.5	10.5	9.6	10.9	11.4	9.6	8.6	8.1
5	8.7	9.2	10.7	8.9	8.5	10.2	9.7	11.1	11.9	9.5	8.5	8.1
6	8.6	9.2	10.8	8.8	8.5	10.1	9.9	11.4	12.0	9.4	8.5	8.1
7	8.6	9.2	10.2	8.8	8.5	10.0	11.8	11.5	12.0	9.3	8.5	8.0
8	8.5	9.0	9.8	8.7	8.6	10.0	12.4	11.9	12.3	9.3	8.6	8.0
9	8.5	8.9	9.7	8.7	8.7	12.5	11.8	12.4	12.4	9.3	8.5	8.0
10	8.5	9.4	9.6	8.7	8.7	11.5	11.5	12.4	12.3	9.3	8.8	8.0
11	8.5	9.3	9.4	8.6	8.6	10.6	11.0	12.0	12.1	9.4	8.8	8.0
12	8.4	9.2	9.3	8.6	8.7	10.4	10.8	12.2	12.1	9.3	8.9	8.0
13	8.4	9.2	9.1	8.7	8.8	10.1	10.9	12.3	11.9	9.3	8.9	8.0
14	8.4	9.2	9.0	8.6	8.8	10.1	11.0	11.6	11.4	9.3	8.7	8.0
15	8.3	9.1	9.0	8.7	8.7	9.7	11.2	11.3	11.4	9.2	8.7	8.0
16	8.3	9.0	9.0	8.6	8.9	9.6	11.1	11.1	11.2	9.2	8.5	8.0
17	8.3	9.0	9.0	8.6	9.2	9.7	11.3	11.6	11.1	9.1	8.5	7.8
18	8.3	8.9	8.9	8.6	9.3	9.8	11.8	11.8	11.1	8.9	8.4	7.9
19	8.3	8.9	8.9	8.6	9.1	9.6	12.2	11.2	11.1	9.0	8.4	8.0
20	8.3	8.6	8.9	8.6	9.0	9.6	11.9	11.0	11.1	8.9	8.4	8.0
21	8.3	7.0	8.9	8.6	9.0	9.6	11.4	10.8	11.1	9.0	8.3	8.1
22	8.3	8.9	8.9	8.5	9.5	9.4	10.9	10.8	11.0	8.9	8.3	8.0
23	8.3	8.9	8.8	8.5	9.4	9.4	10.8	11.0	10.9	8.9	8.2	8.0
24	8.3	8.9	8.8	8.5	10.5	9.5	10.7	11.3	10.7	8.9	8.2	7.9
25	8.3	8.8	8.8	8.6	10.8	9.4	10.5	11.9	10.6	8.9	8.2	7.9
26	8.4	8.8	8.8	8.6	11.3	9.3	10.5	11.7	10.5	8.9	8.2	7.8
27	8.9	8.8	8.8	8.5	11.8	9.3	10.5	12.4	10.4	8.8	8.2	7.9
28	9.9	9.3	8.8	8.5	11.3	9.2	10.4	12.7	10.1	8.9	8.1	7.9
29	9.7	9.3	8.8	8.5	.....	9.4	10.5	12.7	10.1	8.8	8.1	7.9
30	9.4	9.6	8.7	8.5	.....	9.5	10.8	12.6	10.2	8.8	8.1	7.8
31	9.3	.....	8.6	8.5	.....	9.6	.....	12.4	.....	8.8	8.1	.....
1902–3.												
1	7.8	8.1	8.5	8.3	10.5	9.4	15.0	11.8	12.6	9.9	8.4	7.9
2	7.8	8.1	8.5	8.5	10.3	9.4	13.1	12.0	12.6	9.9	8.4	7.9
3	7.8	8.1	8.5	8.0	10.0	9.4	12.0	12.1	12.2	9.7	8.3	7.9
4	7.8	8.1	8.5	8.4	9.9	10.0	11.4	12.2	12.0	9.6	8.4	7.9
5	7.8	8.1	8.3	8.5	9.8	10.7	11.1	12.0	12.0	9.5	8.4	7.9
6	7.8	8.0	8.6	8.5	9.7	10.2	10.9	12.4	12.0	9.4	8.3	7.8
7	7.8	8.0	8.9	8.5	9.6	10.0	10.7	12.7	12.0	9.3	8.3	7.8
8	7.8	8.1	8.8	8.5	9.7	9.9	10.7	12.5	12.0	9.1	8.3	7.8
9	7.8	8.1	10.2	8.6	9.8	10.4	10.9	12.8	11.8	9.1	8.3	7.8
10	7.9	8.4	8.8	8.6	9.7	10.1	11.2	13.0	11.9	9.0	8.2	7.9
11	7.8	10.0	9.3	8.5	9.8	10.0	10.9	13.2	11.8	9.0	8.2	7.9
12	7.8	9.2	9.5	8.5	9.8	9.9	10.7	13.3	11.3	9.0	8.2	7.9
13	7.8	8.8	9.2	8.5	9.8	9.8	10.6	13.3	11.2	9.0	8.3	7.9
14	7.8	8.7	9.0	8.5	9.5	10.2	10.5	12.8	11.2	8.9	8.2	7.8
15	7.8	8.7	8.8	8.5	9.5	10.3	10.3	12.8	11.1	8.9	8.2	7.8

Daily gage height, in feet, of Merced River near Merced Falls, Cal., for 1901–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1902-3.												
16	7.9	8.6	8.8	8.4	9.4	10.2	10.3	11.9	10.7	8.9	8.2	7.8
17	7.8	8.6	8.7	8.5	9.4	10.9	10.3	11.5	10.4	8.8	8.1	7.8
18	7.8	8.6	8.7	8.5	9.3	10.7	10.2	11.3	10.3	8.8	8.1	7.8
19	7.8	9.3	8.7	8.4	9.3	10.7	10.1	11.3	10.5	8.8	8.0	7.8
20	7.8	9.0	8.5	8.4	9.3	10.6	10.1	11.1	10.8	8.8	8.0	7.8
21	7.8	8.8	8.6	8.4	9.3	10.4	10.2	10.7	10.7	8.7	8.0	7.8
22	7.8	8.8	8.6	8.4	9.4	10.1	10.5	10.8	10.7	8.6	8.0	7.8
23	7.9	8.7	8.6	8.5	9.4	10.0	10.8	10.6	10.6	8.5	8.0	7.8
24	8.2	8.7	8.6	8.5	9.4	10.2	11.2	10.6	10.5	8.5	8.1	7.8
25	8.8	8.6	8.6	9.2	9.4	11.1	11.7	10.6	10.5	8.5	8.0	7.8
26	8.4	8.6	8.6	10.7	9.4	10.7	11.5	10.6	10.6	8.5	8.1	7.8
27	8.4	8.5	8.7	12.6	9.4	10.5	11.4	11.8	10.5	8.5	8.0	7.7
28	8.3	8.7	8.8	13.8	9.4	10.6	11.2	11.9	10.4	8.4	8.0	7.7
29	8.2	8.6	8.7	11.1	.....	11.3	11.3	12.1	10.3	8.5	8.0	7.7
30	8.1	8.6	8.6	10.5	.....	11.4	11.7	12.5	10.0	8.4	7.9	7.7
31	8.1	.....	8.6	10.7	.....	13.5	.....	12.7	.....	8.4	7.9	.....
1903-4.												
1	7.7	7.8	8.3	8.2	8.2	10.15	10.65	10.85	12.35	10.3	8.8	8.2
2	7.7	7.7	8.3	8.2	8.2	9.9	10.35	10.65	12.3	10.15	8.95	8.05
3	7.8	7.8	8.2	8.2	8.25	9.85	10.45	10.55	13.05	10.1	9.15	8.05
4	7.8	7.8	8.3	8.25	8.35	9.9	10.3	11.0	12.7	9.95	8.95	8.05
5	7.8	7.8	8.3	8.2	8.65	9.9	10.3	11.55	12.55	9.9	8.95	8.0
6	7.8	7.8	8.2	8.1	8.55	9.8	10.5	12.4	12.5	9.95	9.15	8.0
7	7.9	7.8	8.1	8.1	8.6	9.75	10.65	13.35	12.35	9.9	9.25	8.0
8	7.9	7.9	8.1	8.05	8.5	9.95	11.0	12.6	11.9	9.9	9.0	8.0
9	7.8	7.9	8.1	8.1	8.5	10.0	10.8	13.05	11.85	9.85	8.85	8.0
10	7.8	7.9	8.0	8.1	8.5	10.2	11.55	13.3	11.85	9.65	8.75	8.0
11	7.8	7.9	8.1	8.2	8.4	11.65	11.6	13.55	11.75	9.55	8.65	7.95
12	7.8	7.8	8.1	8.1	8.45	10.7	11.85	13.95	11.75	9.45	8.6	7.9
13	7.8	7.9	8.1	8.1	10.45	10.3	12.1	13.65	11.7	9.45	8.55	7.9
14	7.8	8.0	8.1	8.05	9.3	10.1	12.4	14.1	11.55	9.35	8.45	7.9
15	7.8	8.5	8.1	8.15	9.05	10.15	12.15	13.7	11.45	9.30	8.4	7.9
16	7.8	8.5	8.1	8.1	12.45	10.2	11.4	13.7	11.5	9.25	8.8	7.85
17	7.8	8.4	8.2	8.1	10.65	10.1	11.3	13.7	11.4	9.15	8.8	7.9
18	7.8	8.3	8.2	8.15	9.8	10.6	11.3	13.9	11.3	9.1	8.75	8.15
19	7.8	8.1	8.4	8.3	9.35	10.9	12.1	12.5	11.15	9.2	8.6	8.2
20	7.8	8.3	8.2	8.25	9.15	11.3	11.55	12.6	11.2	9.3	8.5	8.2
21	7.8	8.8	8.2	8.2	9.1	11.65	11.25	12.8	11.0	9.25	8.4	8.15
22	7.8	8.8	8.2	8.2	9.35	11.3	11.25	13.15	10.9	9.2	8.4	8.15
23	7.8	8.6	8.2	8.2	9.9	13.0	10.9	13.65	10.95	9.35	8.35	8.1
24	7.8	8.5	8.2	8.15	10.8	11.75	10.6	13.55	10.85	9.25	8.3	8.35
25	7.8	8.4	8.1	8.15	11.35	11.6	10.85	13.55	10.65	9.2	8.3	9.9
26	7.8	8.5	8.1	8.2	10.75	11.1	11.15	12.75	10.55	9.15	8.3	9.9
27	7.8	8.4	8.1	8.35	12.3	10.65	11.05	12.3	10.5	9.1	8.25	9.55
28	7.8	8.3	8.1	8.20	11.6	11.15	11.25	12.45	10.45	9.1	8.2	9.3
29	7.8	8.3	8.1	8.2	10.5	12.4	10.6	12.65	10.4	9.0	8.2	9.45
30	7.8	8.3	8.1	8.2	.....	11.55	10.6	12.5	10.35	8.9	8.3	9.8
31	7.8	.....	8.1	8.2	.....	11.05	.....	12.45	.....	8.8	8.25	.....
1904-5.												
1	9.9	9.15	8.7	9.2	9.2	9.5	10.15	11.55	11.45	10.4	8.6	8.0
2	11.25	9.1	8.7	8.95	13.45	9.6	10.2	11.2	11.35	10.25	8.5	7.95
3	10.35	9.1	8.7	8.85	10.75	9.7	10.3	10.95	11.35	10.15	8.5	7.95
4	10.15	9.1	8.65	8.8	10.45	9.8	10.4	10.8	11.2	10.05	8.45	8.0
5	10.15	9.05	8.6	8.7	10.8	9.8	10.5	10.7	11.05	10.05	8.4	8.05
6	10.4	9.0	8.6	8.7	10.35	9.75	10.6	10.6	11.2	9.95	8.4	8.0
7	11.45	8.95	8.5	8.7	9.85	9.8	10.7	10.7	11.45	9.95	8.35	7.9
8	11.15	8.9	8.5	8.7	9.65	9.85	10.7	11.05	11.45	9.9	8.35	7.9
9	10.7	8.9	8.5	8.7	9.5	9.85	10.7	10.85	11.35	9.95	8.4	7.9
10	10.4	8.9	8.5	8.7	9.4	9.85	10.75	10.65	11.35	10.0	8.3	7.9
11	11.25	8.85	8.5	8.7	9.3	9.85	10.6	10.6	11.6	9.9	8.35	7.9
12	11.7	8.8	8.4	8.65	9.25	9.8	10.4	10.5	11.95	9.8	8.4	7.9
13	10.85	8.8	8.5	8.6	9.1	10.95	10.3	10.6	11.85	9.7	8.4	7.9
14	10.5	8.8	8.5	8.6	9.1	10.6	10.25	10.85	11.75	9.55	8.35	7.85
15	10.25	8.8	8.5	8.6	9.1	10.25	10.4	11.35	11.7	9.35	8.3	7.8
16	9.95	8.8	8.45	8.7	9.1	10.15	10.6	12.05	11.7	9.25	8.25	7.85
17	9.8	8.8	8.4	8.7	9.3	11.3	10.5	12.7	11.6	9.1	8.2	7.85
18	9.7	8.8	8.4	8.6	9.3	10.7	10.55	12.5	11.45	9.1	8.2	7.85
19	9.55	8.8	8.4	8.7	9.3	13.55	10.8	12.25	11.4	9.05	8.15	7.85
20	9.5	8.7	8.4	8.7	9.35	11.75	10.55	12.35	11.3	9.0	8.1	7.8

Daily gage height, in feet, of Merced River near Merced Falls, Cal., for 1901–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904–5.												
21	9.45	8.7	8.4	8.9	9.35	10.9	10.4	12.25	11.3	9.0	8.1	7.8
22	9.45	8.7	8.35	9.05	9.3	10.55	10.35	11.95	11.3	9.0	8.1	7.8
23	9.5	8.7	8.4	8.9	9.25	10.3	10.35	11.8	11.05	9.0	8.1	7.75
24	9.55	8.6	8.45	8.85	9.25	10.3	10.55	11.9	10.85	9.0	8.1	7.8
25	9.45	8.6	8.8	8.85	9.3	10.25	10.8	12.05	10.65	9.0	8.1	7.7
26	9.45	8.6	8.55	8.8	9.4	10.3	10.85	12.05	10.6	8.9	8.1	7.7
27	9.4	8.6	8.45	8.75	9.4	10.45	11.0	11.65	10.55	8.9	8.1	7.8
28	9.35	8.6	8.5	8.7	9.4	10.2	11.4	11.4	10.45	8.85	8.1	7.8
29	9.3	8.85	8.5	8.7	.....	10.4	11.75	11.15	10.5	8.8	8.0	7.8
30	9.3	8.75	8.5	8.7	.....	10.35	11.8	11.2	10.5	8.75	8.0	7.8
31	9.2	.....	10.35	8.8	.....	10.2	.....	11.35	.....	8.65	8.0	.....
1905–6.												
1	7.85	7.85	8.1	8.1	9.0	10.35	13.05	11.35	12.4	14.0	10.55	9.1
2	7.8	7.8	8.1	8.1	9.0	10.15	12.15	11.55	12.45	14.2	10.5	9.1
3	7.9	7.85	8.0	8.05	9.0	10.05	11.7	11.75	12.65	14.35	10.45	9.0
4	7.8	7.8	7.95	8.0	9.0	11.3	11.45	12.15	12.65	14.35	10.35	9.0
5	7.9	7.8	8.0	8.0	9.0	10.7	11.25	12.45	13.15	14.3	10.25	8.95
6	7.9	7.8	8.0	8.05	9.0	10.5	11.0	12.75	12.55	14.15	10.15	8.9
7	7.9	7.8	8.0	8.05	9.0	10.2	11.0	13.0	12.25	14.05	10.15	8.9
8	7.9	7.8	8.0	8.0	9.0	10.15	10.85	13.15	12.7	14.05	10.15	8.9
9	7.9	7.8	8.0	8.05	9.05	10.1	10.95	13.2	13.1	13.9	10.15	8.9
10	7.9	7.85	8.0	8.15	9.1	10.1	11.25	13.5	13.35	13.5	10.15	8.8
11	7.9	7.85	8.0	8.05	9.25	10.15	11.45	13.85	13.95	13.55	10.3	8.8
12	7.8	7.9	7.9	8.15	9.1	13.25	11.15	13.35	14.4	13.6	10.15	8.75
13	7.8	7.8	7.9	10.55	9.0	12.8	11.05	12.75	14.65	13.4	9.95	8.8
14	7.85	7.8	7.9	13.45	9.05	11.7	11.15	12.75	14.0	13.3	9.9	8.75
15	7.85	7.8	7.95	10.55	9.95	16.7	11.15	12.8	14.05	13.05	9.8	8.75
16	7.8	7.85	7.95	10.3	9.9	13.55	11.3	12.7	14.4	12.8	9.75	8.7
17	7.8	7.85	8.0	10.8	9.5	12.2	11.35	12.6	14.7	12.65	9.75	8.7
18	7.8	7.85	8.1	13.85	9.4	11.5	11.3	12.95	14.15	12.4	9.65	8.6
19	7.8	7.85	8.1	16.9	9.75	11.1	11.45	13.3	14.55	12.2	9.8	8.6
20	7.8	7.9	8.05	11.55	9.65	10.85	11.6	13.3	14.8	11.85	9.85	8.5
21	7.8	7.9	8.1	10.55	11.15	10.85	11.85	13.2	15.0	11.85	9.75	8.5
22	7.85	7.9	8.05	10.05	11.2	11.15	12.0	12.9	14.9	11.65	9.55	8.5
23	7.9	7.9	8.05	9.85	10.7	11.1	12.7	12.5	14.45	11.75	9.45	8.5
24	7.85	7.9	8.0	9.65	10.45	14.55	12.0	12.3	14.9	11.7	9.3	8.5
25	7.85	7.9	8.0	9.5	10.8	15.85	11.6	12.25	14.9	11.7	9.2	8.5
26	7.85	7.9	8.0	9.5	10.45	14.1	11.4	13.75	14.0	11.6	9.2	8.55
27	7.85	8.0	8.0	9.4	10.25	12.9	11.45	13.4	13.45	11.5	9.1	8.55
28	7.85	7.95	8.05	9.25	10.7	12.0	12.15	16.0	12.85	11.25	9.1	8.5
29	7.85	8.25	8.2	9.2	.....	11.55	11.7	13.6	13.0	11.0	9.1	8.5
30	7.8	8.15	8.2	9.1	.....	11.6	11.5	12.8	13.45	10.8	9.1	8.5
31	7.8	.....	8.2	9.0	.....	14.1	.....	12.5	.....	10.7	9.1	.....
1906–7.												
1	8.35	8.3	8.4	9.9	10.6	10.15	11.75	12.5	13.95	12.65	10.35	8.7
2	8.35	8.3	8.35	9.55	11.5	10.0	12.0	12.55	14.15	12.4	10.35	8.75
3	8.4	8.3	8.35	9.4	12.05	10.0	11.95	12.75	14.1	12.45	10.2	8.7
4	8.4	8.3	8.3	9.35	11.55	10.25	11.55	12.6	14.1	12.8	10.1	8.75
5	8.45	8.5	8.4	10.25	11.5	11.55	11.4	12.1	13.85	12.75	9.95	8.65
6	8.4	8.7	8.35	9.85	11.1	11.85	11.3	11.95	13.6	12.25	9.95	8.7
7	8.35	8.55	8.3	9.6	10.85	11.65	11.25	11.95	13.1	12.1	9.85	8.7
8	8.4	8.5	8.35	11.0	10.65	11.1	11.35	11.95	12.5	12.15	9.85	8.6
9	8.4	8.45	8.4	10.45	10.6	10.9	11.6	12.4	12.35	11.95	9.75	8.6
10	8.4	8.4	8.5	10.65	10.6	12.55	11.85	12.75	12.8	11.7	9.65	8.6
11	8.4	8.4	9.75	10.2	10.45	13.9	12.0	12.95	13.1	11.55	9.55	8.6
12	8.3	8.4	11.65	9.9	10.4	12.7	12.35	12.45	12.85	11.55	9.45	8.6
13	8.3	8.4	9.6	9.6	10.3	11.85	12.6	11.9	12.15	11.6	9.4	8.6
14	8.3	8.4	9.05	10.0	10.2	11.25	12.9	11.8	11.5	11.4	9.35	8.6
15	8.3	8.4	8.9	10.2	10.1	11.0	12.6	12.3	11.3	11.25	9.4	8.6
16	8.3	8.4	8.8	10.1	10.1	10.85	12.25	12.9	11.25	11.2	9.45	8.55
17	8.3	8.4	8.75	10.05	10.3	15.2	12.25	13.0	11.2	11.1	9.45	8.5
18	8.35	8.3	8.65	10.05	10.25	14.8	12.55	13.45	11.3	11.1	9.45	8.45
19	8.35	8.4	8.65	9.85	10.0	18.0	12.85	13.75	12.05	11.1	9.45	8.4
20	8.3	8.4	8.65	9.75	9.95	16.05	13.05	13.45	12.55	11.0	9.25	8.4
21	8.3	8.35	8.6	9.8	9.9	14.8	13.0	13.25	12.8	10.85	9.2	8.35
22	8.3	8.3	8.55	9.95	11.55	13.95	13.0	13.05	12.75	10.75	9.1	8.35
23	8.3	8.3	8.7	9.95	10.7	13.55	13.0	12.45	12.3	10.65	9.05	8.3
24	8.3	8.3	8.6	10.0	10.55	16.55	13.05	12.1	12.05	10.75	9.0	8.25
25	8.3	8.3	8.65	10.45	10.45	15.6	12.9	12.45	12.5	10.8	8.9	8.2

Daily gage height, in feet, of Merced River near Merced Falls, Cal., for 1901–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.												
26	8.3	8.3	11.5	10.6	10.7	13.65	13.0	12.8	12.5	10.7	8.9	8.25
27	8.3	8.3	11.45	10.25	10.3	12.75	12.95	12.85	12.7	10.65	8.85	8.2
28	8.3	8.3	11.3	15.6	10.25	12.3	12.9	13.1	12.8	10.65	8.85	8.25
29	8.3	8.3	10.35	12.7	.....	11.95	12.85	13.3	12.4	10.6	8.8	8.25
30	8.05	8.3	9.75	11.4	.....	11.85	12.6	13.45	13.05	10.45	8.8	8.3
31	8.3	.....	10.35	10.75	.....	11.85	.....	13.85	.....	10.3	8.7	.....
1907–8.												
1	8.25	8.6	8.2	9.15	8.9	9.6	9.45	11.55	10.3	9.45	9.0	7.95
2	8.2	8.6	8.2	8.9	8.9	10.0	9.45	11.45	10.25	9.35	9.0	7.9
3	8.2	8.55	8.2	8.85	8.9	9.75	9.45	11.1	10.15	9.4	8.95	7.95
4	8.15	8.5	8.2	8.9	9.3	9.55	9.5	10.65	10.0	9.45	8.95	7.9
5	8.3	8.5	8.5	8.85	9.25	9.55	9.65	10.55	9.95	9.45	8.8	7.7
6	8.2	8.4	9.4	8.75	9.1	9.55	9.85	10.7	9.95	9.45	8.7	7.7
7	8.2	8.4	8.75	8.7	9.1	9.5	9.8	11.0	10.15	9.35	8.65	7.7
8	8.25	8.4	8.65	8.7	9.0	9.4	9.6	10.75	10.4	9.35	8.6	7.7
9	8.1	8.4	9.35	8.7	9.15	9.35	9.65	10.45	10.5	9.3	8.6	7.7
10	8.2	8.35	8.95	8.8	9.5	9.35	9.9	10.25	10.5	9.15	8.55	7.85
11	8.2	8.4	8.8	8.8	9.15	9.4	10.25	10.2	10.5	9.05	8.5	8.15
12	8.2	8.4	8.8	8.8	9.15	9.45	10.6	10.3	10.45	9.1	8.45	8.15
13	8.2	8.4	8.7	8.8	9.15	9.45	10.75	10.2	10.45	9.1	8.4	8.3
14	8.2	8.3	8.75	9.65	9.0	9.6	10.7	10.05	10.4	9.1	8.4	8.3
15	8.2	8.3	8.7	9.45	9.0	9.75	10.8	10.2	10.3	9.0	8.4	8.25
16	8.1	8.3	8.7	9.05	8.9	9.95	10.6	10.2	10.15	8.9	8.3	8.2
17	8.2	8.25	8.7	8.95	8.95	10.1	10.4	10.15	10.1	8.8	8.3	8.2
18	8.15	8.25	8.6	8.9	8.9	10.15	10.6	10.15	9.95	8.7	8.3	8.2
19	8.15	8.3	8.6	8.9	8.9	10.15	10.9	10.35	9.85	8.7	8.3	8.1
20	8.2	8.3	8.6	8.8	8.9	10.15	11.2	10.4	9.8	8.75	8.3	8.1
21	8.15	8.2	8.6	8.8	8.9	10.2	11.2	10.2	9.75	8.75	8.3	8.2
22	8.2	8.2	8.6	8.8	8.55	10.1	10.85	10.35	9.65	8.75	8.05	8.25
23	8.3	8.25	8.6	8.8	8.8	10.1	10.65	10.5	9.55	8.75	7.9	8.25
24	8.3	8.2	8.6	9.1	8.8	10.2	10.4	10.8	9.55	8.75	8.2	8.25
25	8.3	8.2	8.6	10.4	8.8	10.25	10.4	11.0	9.65	8.75	8.2	8.25
26	8.4	8.2	8.6	10.05	8.9	10.15	10.6	10.95	9.65	8.65	8.2	8.2
27	8.4	8.2	8.6	9.45	9.05	9.9	10.95	10.75	9.6	8.7	8.2	8.2
28	8.65	8.2	8.6	9.25	9.2	9.7	11.5	10.75	9.55	8.75	8.2	8.2
29	8.7	8.2	8.8	9.1	9.75	9.65	11.6	10.85	9.5	8.85	7.9	8.2
30	8.7	8.2	8.9	9.0	.....	9.6	11.5	10.9	9.45	8.8	7.9	8.1
31	8.6	.....	9.15	8.95	.....	9.6	.....	10.6	.....	9.05	8.2	.....
1908–9.												
1	8.1	8.1	7.8	8.05	10.45	10.0	10.05	12.7	13.6	11.65	9.0	8.5
2	8.2	8.0	7.95	8.1	10.2	9.95	10.25	12.9	14.0	11.75	9.0	8.6
3	8.0	8.0	8.0	8.1	11.3	10.15	10.35	12.85	14.05	11.8	8.85	8.6
4	7.8	8.0	8.05	8.1	11.25	10.7	10.5	13.0	14.2	11.65	8.9	8.5
5	8.0	7.9	8.35	8.3	11.05	10.6	10.35	13.1	14.2	11.4	9.0	8.4
6	7.9	7.85	8.5	8.45	10.95	10.4	10.25	13.05	13.75	10.8	9.0	8.4
7	7.7	7.85	8.4	9.45	10.95	10.7	10.2	13.15	13.2	10.45	9.0	8.4
8	7.95	7.85	8.3	9.1	11.15	10.65	10.3	13.2	13.15	10.35	9.0	8.3
9	7.9	7.6	8.25	10.65	10.9	10.5	10.5	13.15	12.85	10.3	9.0	8.3
10	7.9	7.85	8.25	10.0	10.6	10.35	10.7	13.0	12.75	10.3	8.9	8.3
11	7.95	7.8	8.25	9.25	12.4	10.2	10.6	12.5	12.8	10.3	8.85	8.35
12	8.2	7.95	8.25	9.0	16.35	10.1	10.45	12.1	13.0	10.5	8.85	8.3
13	7.9	7.9	8.25	14.0	14.15	10.0	10.7	11.8	12.95	10.5	8.8	8.25
14	8.05	7.85	8.25	[a]16.9	12.45	10.0	11.1	11.7	12.7	10.35	8.7	8.35
15	7.95	7.85	8.2	13.95	11.7	10.0	11.6	11.95	12.7	10.25	8.7	8.2
16	7.8	7.85	8.2	11.9	11.45	10.05	12.0	12.15	12.6	10.1	8.7	8.2
17	8.15	7.85	8.2	11.4	11.2	10.1	12.1	12.05	12.3	10.05	8.6	8.2
18	8.5	7.8	7.95	10.7	10.9	10.05	12.05	12.2	12.15	9.9	8.55	8.2
19	8.3	7.85	8.2	10.35	10.75	10.0	12.0	12.35	11.9	9.7	8.55	8.2
20	8.3	7.8	8.05	10.2	10.6	9.95	11.6	12.6	11.65	9.6	8.65	8.15
21	8.3	7.6	8.1	16.25	10.9	10.0	11.4	12.7	11.8	9.45	8.7	8.1
22	8.25	7.8	7.95	14.45	10.7	10.05	11.05	12.25	12.2	9.45	8.7	8.1
23	8.25	8.25	8.05	12.3	10.5	9.95	11.05	11.9	12.5	9.55	8.7	8.1
24	8.25	8.25	8.1	11.55	10.4	9.95	11.2	11.65	12.7	9.6	8.7	8.2
25	8.05	8.1	8.05	11.65	10.3	9.8	11.65	11.75	12.5	9.55	8.7	8.05

[a] Maximum 18.4 at 7 a. m.

Daily gage height, in feet, of Merced River near Merced Falls, Cal., for 1901–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908–9.												
26	7.7	8.2	8.05	12.25	10.2	9.9	12.0	12.45	12.15	9.45	8.6	8.2
27	8.1	8.25	8.05	12.2	10.1	9.8	12.35	12.6	11.95	9.35	8.5	8.0
28	8.2	8.2	8.1	11.45	10.0	9.8	12.3	12.25	11.9	9.25	8.45	8.05
29	8.2	8.1	8.1	10.8	.....	10.1	12.05	11.95	11.85	9.1	8.45	8.05
30	8.25	8.2	8.1	10.45	.....	10.3	12.35	12.0	11.75	9.0	8.45	8.2
31	8.25	.....	8.1	10.8	.....	10.1	.....	13.0	.....	9.0	8.45	.....
1909–10.												
1	8.2	8.15	9.5	15.6	10.1	9.8	10.6	11.65	11.8	9.15	8.5	8.0
2	8.2	8.2	11.6	12.25	9.95	9.95	10.65	11.55	11.6	9.1	8.5	7.9
3	8.2	8.2	10.35	11.3	9.9	10.05	10.65	11.7	11.1	9.1	8.45	7.95
4	8.25	8.2	9.75	10.7	9.8	10.2	10.8	11.3	10.85	9.0	8.4	7.95
5	8.3	8.2	9.7	10.4	9.8	10.25	11.0	10.95	10.7	8.9	8.4	7.95
6	8.35	8.2	9.55	10.25	9.7	10.25	11.0	11.1	10.6	8.8	8.35	8.1
7	8.4	8.2	9.9	10.15	9.75	10.35	10.9	11.8	10.4	8.8	8.35	7.7
8	8.35	8.2	9.5	10.0	9.85	10.35	11.2	12.25	10.3	8.8	8.35	7.9
9	8.3	8.25	15.65	9.95	9.7	10.45	11.6	12.3	10.2	8.9	8.3	7.95
10	8.3	8.6	11.65	9.9	9.7	10.45	11.75	12.3	10.2	8.95	8.4	7.7
11	8.4	8.85	10.5	9.8	9.65	10.45	11.65	12.2	10.25	8.9	8.35	7.7
12	8.35	8.7	10.15	9.75	9.65	10.5	11.25	12.05	10.3	8.9	8.3	7.95
13	8.4	8.7	10.0	9.65	9.65	10.55	11.0	12.3	10.15	8.9	8.2	7.95
14	8.35	8.75	9.85	9.95	9.7	10.55	11.45	12.25	10.05	8.8	8.3	7.95
15	8.35	8.7	9.75	10.6	9.7	10.45	11.75	12.4	9.95	8.8	8.3	7.95
16	8.25	8.65	9.6	12.25	9.6	10.25	12.0	12.45	9.75	8.8	8.25	10.15
17	8.2	8.6	9.55	11.45	9.55	10.2	12.3	12.0	9.75	8.8	8.25	9.65
18	8.15	8.65	9.5	10.75	9.55	10.45	12.5	11.85	9.75	8.8	8.25	9.05
19	8.2	8.65	9.45	10.45	9.8	11.05	12.6	11.7	9.65	9.2	8.25	8.85
20	8.2	8.75	9.35	10.2	9.85	11.15	12.7	11.95	9.55	9.25	8.3	8.6
21	8.2	10.05	9.4	10.1	9.7	10.85	12.4	11.9	9.5	9.1	8.2	8.5
22	8.2	10.55	9.25	10.15	9.65	11.2	12.6	12.05	9.4	8.85	8.05	8.4
23	8.2	9.85	9.25	10.35	9.7	12.2	12.7	12.0	9.35	8.8	8.05	8.35
24	8.2	9.6	9.2	10.75	9.65	11.4	12.8	12.15	9.3	8.8	8.05	8.3
25	8.2	10.2	9.15	10.85	9.7	10.95	12.7	11.95	9.3	8.75	8.05	8.25
26	8.2	10.4	9.15	10.6	9.7	10.85	12.9	11.75	9.3	8.65	8.05	8.25
27	8.2	9.85	9.1	10.5	9.65	10.55	12.65	11.85	9.4	8.6	8.05	8.3
28	8.2	9.5	9.05	10.4	9.7	10.45	12.5	11.85	9.4	8.6	8.05	8.25
29	8.2	9.45	9.05	10.3	.....	10.4	12.2	11.8	9.3	8.65	8.1	8.25
30	8.2	9.5	9.1	10.2	.....	10.4	11.85	11.9	9.2	8.6	8.05	8.25
31	8.25	.....	13.15	10.1	.....	10.45	.....	11.85	.....	8.55	7.95	.....
1910–11.												
1	8.2	8.3	8.5	8.45	15.05	10.8	12.2	12.05	12.4	12.55	10.15	8.85
2	8.2	8.3	8.5	8.5	13.0	12.35	12.25	12.05	12.65	12.6	10.1	8.85
3	8.2	8.35	8.5	8.45	11.8	12.35	12.4	12.25	13.3	12.8	10.0	8.8
4	8.15	8.3	8.55	8.4	11.7	14.45	12.15	12.65	13.6	12.7	9.9	8.8
5	8.0	8.1	8.7	8.4	11.25	14.45	12.8	13.2	13.8	12.7	9.9	8.75
6	8.0	8.25	8.65	8.45	10.85	13.65	12.75	12.6	14.0	12.8	9.85	8.7
7	8.15	8.2	8.6	8.45	10.5	16.5	12.2	12.25	13.8	12.75	9.7	8.7
8	7.95	8.45	8.65	8.45	10.75	16.1	12.0	12.3	13.65	12.5	9.7	8.6
9	7.95	8.35	8.7	8.6	10.55	16.05	12.0	12.5	13.55	12.15	9.7	8.6
10	7.95	8.2	8.75	10.15	10.4	16.05	12.0	12.4	13.8	12.1	9.65	8.55
11	8.0	8.45	8.85	9.25	11.0	13.8	11.8	12.55	14.25	12.25	9.6	8.5
12	8.05	8.45	9.4	9.6	10.75	12.75	11.65	12.7	14.6	12.1	9.6	8.55
13	8.7	8.45	9.05	13.2	11.3	12.1	11.55	12.55	14.65	12.1	9.5	8.6
14	8.7	8.45	8.9	11.15	11.8	11.8	11.45	12.55	14.6	12.05	9.45	8.5
15	8.6	8.45	8.8	11.4	10.95	11.65	11.4	12.25	14.35	12.1	9.35	8.45
16	8.6	8.45	8.7	10.1	10.6	11.55	11.5	11.95	14.4	13.2	9.3	8.4
17	8.6	8.45	8.7	9.45	10.4	11.55	11.6	11.9	14.5	12.4	9.25	8.35
18	8.6	8.4	8.6	9.2	10.25	11.5	11.75	11.85	14.45	12.45	9.2	8.4
19	8.65	8.45	8.65	9.1	10.3	11.6	11.95	12.3	14.4	12.0	9.2	8.38
20	8.6	8.5	8.65	9.35	10.35	11.5	12.0	12.85	14.3	11.7	9.2	8.38
21	8.6	8.45	8.6	11.3	10.15	11.55	12.0	13.25	14.25	11.4	9.2	8.36
22	8.6	8.5	8.6	10.35	10.1	11.5	12.05	13.55	13.65	11.2	9.15	8.4
23	8.5	8.45	8.5	9.55	10.0	11.5	12.35	13.95	13.3	11.1	9.1	8.45
24	8.5	8.5	8.55	13.1	10.05	11.5	12.55	13.8	12.8	11.05	9.0	8.65
25	8.4	8.65	8.55	15.75	9.9	11.5	12.75	13.3	12.5	10.95	9.0	8.82
26	8.4	8.6	8.55	11.85	9.85	11.55	12.8	12.8	13.0	10.7	9.0	8.7
27	8.35	8.55	8.55	10.85	9.85	11.6	12.45	12.9	13.4	10.55	9.0	8.65
28	8.3	8.5	8.5	10.25	9.8	11.65	12.15	13.05	13.4	10.6	8.9	8.6
29	8.35	8.5	8.45	12.9	.....	11.75	11.95	13.15	13.05	10.4	8.95	8.55
30	8.3	8.5	8.45	21.05	.....	11.85	11.9	12.8	12.85	10.3	8.9	8.5
31	8.3	.....	8.5	20.95	.....	12.05	.....	12.55	.....	10.2	8.85	.....

Daily gage height, in feet, of Merced River near Merced Falls, Cal., for 1901–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	8.55	8.35	8.42	8.50	8.95	8.62	9.4	10.3	12.9
2	8.55	8.40	8.40	8.52	8.90	8.66	9.5	10.3	13.2
3	8.65	8.30	8.40	8.52	8.90	8.69	9.65	10.2	13.4
4	8.70	8.32	8.42	8.42	8.80	8.85	9.75	10.1	13.3
5	8.55	8.35	8.40	8.38	8.85	9.2	9.9	10.3	13.2
6	8.55	8.30	8.45	8.48	8.78	9.8	9.7	10.4	13.1
7	8.55	8.35	8.60	8.55	8.82	10.25	9.9	10.4	13.1
8	8.65	8.30	8.62	8.55	8.82	10.0	10.05	10.6	12.6
9	8.55	8.32	8.51	8.66	8.80	9.75	10.1	10.7	12.1
10	8.55	8.45	8.40	8.70	8.80	9.5	10.4	10.9	11.8
11	8.51	8.80	8.45	9.3	8.80	9.5	10.65	11.3	11.7
12	8.60	8.80	8.48	9.1	8.82	9.65	10.35	11.7	11.8
13	8.45	8.50	8.40	8.85	8.82	10.4	10.15	11.8	11.8
14	8.45	8.52	8.40	8.80	8.82	10.1	10.05	11.8	11.6
15	8.65	8.48	8.38	8.70	8.80	9.9	10.0	12.1	11.4
16	8.46	8.50	8.41	8.72	8.82	10.5	10.1	12.4	11.3
17	8.42	8.70	8.42	9.00	8.75	10.2	10.05	12.4	11.2
18	8.40	8.70	8.51	8.95	8.80	9.85	10.0	12.6	11.1
19	8.32	8.50	8.46	8.85	8.80	9.8	10.0	12.5	11.1
20	8.15	8.55	8.38	8.78	8.82	9.75	9.9	12.0	11.2
21	8.30	8.62	8.32	8.65	8.82	9.65	9.8	11.6	12.0
22	8.30	8.55	8.25	8.75	8.82	9.55	9.7	11.2	11.6
23	8.25	8.50	8.27	8.75	8.82	9.5	9.6	11.0	10.5
24	8.35	8.48	8.35	8.70	8.76	9.5	9.7	11.0	10.25
25	8.30	8.45	8.35	8.62	8.65	9.55	9.9	11.3	9.95
26	8.30	8.48	8.40	8.78	8.70	9.55	9.75	11.3	9.85
27	8.30	8.45	8.29	9.60	8.56	9.55	10.0	11.4	9.9
28	8.32	8.40	8.33	9.25	8.69	9.5	9.8	11.9	9.9
29	8.30	8.40	8.70	9.1	8.65	9.5	10.1	12.6	9.9
30	8.30	8.41	8.52	9.0	.....	9.6	10.4	12.9	9.9
31	8.30	.....	8.35	9.0	.....	9.5	.....	12.6	.....

Rating tables for Merced River near Merced Falls, Cal.

Jan. 1 to Dec. 31, 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
8.20	130	9.20	460	10.20	1,310	11.50	3,200
8.40	170	9.40	580	10.40	1,550	12.00	4,140
8.60	220	9.60	730	10.60	1,810	12.50	5,230
8.80	280	9.80	900	10.80	2,090	13.00	6,510
9.00	360	10.00	1,090	11.00	2,390	14.00	9,450

Jan. 1 to Dec. 31, 1902.

7.80	65	8.90	320	10.00	1,110	11.20	2,840
7.90	75	9.00	360	10.10	1,220	11.40	3,200
8.00	90	9.10	410	10.20	1,340	11.60	3,590
8.10	110	9.20	460	10.30	1,470	11.80	4,020
8.20	130	9.30	520	10.40	1,600	12.00	4,480
8.30	150	9.40	580	10.50	1,740	12.20	4,960
8.40	170	9.50	650	10.60	1,880	12.40	5,460
8.50	195	9.60	730	10.70	2,030	12.60	5,980
8.60	220	9.70	810	10.80	2,180	12.80	6,500
8.70	250	9.80	900	10.90	2,340		
8.80	280	9.90	1,000	11.00	2,500		

Jan. 1 to Dec. 31, 1903.

7.70	260	8.70	560	10.40	1,810	12.40	5,300
7.80	275	8.80	600	10.60	2,030	12.60	5,420
7.90	295	8.90	640	10.80	2,270	12.80	5,860
8.00	320	9.00	690	11.00	2,540	13.00	6,300
8.10	350	9.20	800	11.20	2,830	13.20	6,780
8.20	380	9.40	930	11.40	3,140	13.40	7,260
8.30	415	9.60	1,080	11.60	3,470	13.60	7,760
8.40	450	9.80	1,240	11.80	3,820	13.80	8,280
8.50	485	10.00	1,420	12.00	4,200	14.00	8,800
8.60	520	10.20	1,610	12.20	4,600	15.00	11,400

Rating tables for Merced River near Merced Falls, Cal.—Continued.

Jan. 1 to Dec. 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
7.80	65	9.00	565	10.20	1,550	11.80	3,630
7.90	95	9.10	630	10.30	1,650	12.00	4,000
8.00	130	9.20	700	10.40	1,760	12.20	4,400
8.10	165	9.30	770	10.50	1,870	12.40	4,800
8.20	200	9.40	845	10.60	1,980	12.60	5,210
8.30	235	9.50	920	10.70	2,100	12.80	5,630
8.40	270	9.60	1,000	10.80	2,220	13.00	6,050
8.50	310	9.70	1,085	10.90	2,340	13.50	7,200
8.60	355	9.80	1,170	11.00	2,460	14.00	8,500
8.70	400	9.90	1,260	11.20	2,720		
8.80	450	10.00	1,350	11.40	3,000		
8.90	505	10.10	1,450	11.60	3,300		

Jan. 1, 1905, to July 31, 1906.

7.70	35	9.00	465	10.30	1,570	11.60	3,570
7.80	50	9.10	520	10.40	1,690	11.70	3,755
7.90	70	9.20	580	10.50	1,820	11.80	3,945
8.00	90	9.30	645	10.60	1,955	11.90	4,140
8.10	115	9.40	715	10.70	2,095	12.00	4,340
8.20	140	9.50	790	10.80	2,240	12.20	4,755
8.30	170	9.60	870	10.90	2,390	12.40	5,200
8.40	200	9.70	955	11.00	2,545	12.60	5,665
8.50	235	9.80	1,045	11.10	2,705	12.80	6,140
8.60	275	9.90	1,140	11.20	2,870	13.00	6,630
8.70	315	10.00	1,240	11.30	3,040		
8.80	360	10.10	1,345	11.40	3,215		
8.90	410	10.20	1,455	11.50	3,390		

NOTE.—This table is based on discharge measurements made during 1905–6. It is well defined between gage heights 7.8 feet and 12 feet.

Aug. 1 to Dec. 3, 1906.

8.00	55	8.90	320	9.80	890	10.70	1,960
8.10	70	9.00	370	9.90	970	10.80	2,120
8.20	90	9.10	425	10.00	1,060	10.90	2,280
8.30	115	9.20	480	10.10	1,160	11.00	2,440
8.40	140	9.30	540	10.20	1,260	11.20	2,780
8.50	170	9.40	610	10.30	1,380	11.40	3,140
8.60	205	9.50	680	10.40	1,510	11.60	3,520
8.70	240	9.60	750	10.50	1,650	11.80	3,930
8.80	280	9.70	820	10.60	1,800	12.00	4,340

NOTE.—This table is based on 7 discharge measurements made during August to November, 1906, and is well defined above gage height 8.4 feet. Above gage height 12 feet, the table is the same as the 1905 one.

Jan. 1 to Dec. 31, 1907.

8.00	50	9.30	655	10.60	1,970	12.80	6,490
8.10	75	9.40	720	10.70	2,110	13.00	7,020
8.20	105	9.50	790	10.80	2,260	13.20	7,600
8.30	140	9.60	860	10.90	2,420	13.40	8,200
8.40	180	9.70	940	11.00	2,600	13.60	8,800
8.50	220	9.80	1,030	11.20	2,970	13.80	9,420
8.60	260	9.90	1,130	11.40	3,350	14.00	10,100
8.70	305	10.00	1,230	11.60	3,740	15.00	13,840
8.80	355	10.10	1,340	11.80	4,160	16.00	17,800
8.90	415	10.20	1,450	12.00	4,600	17.00	22,300
9.00	475	10.30	1,570	12.20	5,040	18.00	27,500
9.10	535	10.40	1,700	12.40	5,520		
9.20	595	10.50	1,830	12.60	6,000		

NOTE.—This table is not applicable for obstructed-channel conditions. It is based on twenty discharge measurements made during 1907 and is well defined between gage heights 8.0 feet and 13.0 feet. The upper part of the table was determined by the weir formula for the dam at Merced Falls, 1½ miles below the station.

Jan. 1 to Dec. 31, 1908.

7.60	35	7.90	55	8.10	90	8.30	145
7.70	40	8.00	70	8.20	115	8.40	180
7.80	45						

NOTE.—This table is not applicable for obstructed-channel conditions. It is based on discharge measurements made during 1907–8 and is fairly well defined. Above 8.4 feet it is the same as the 1907 table.

Daily discharge, in second-feet, of Merced River near Merced Falls, Cal., for 1909–1911.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	80	1,740	1,220	1,270	5,700	8,090	3,590	475	220
2	90	1,430	1,170	1,490	6,190	9,300	3,770	475	260
3	90	2,990	1,380	1,610	6,060	9,460	3,860	385	260
4	90	2,910	2,070	1,800	6,440	9,920	3,590	415	220
5	145	2,590	1,930	1,610	6,700	9,920	3,160	475	180
6	200	2,440	1,670	1,490	6,570	8,530	2,210	475	180
7	755	2,440	2,070	1,430	6,840	6,970	1,740	475	180
8	535	2,750	2,000	1,550	6,970	6,840	1,610	475	145
9	2,000	2,360	1,800	1,800	6,840	6,060	1,550	475	145
10	1,220	1,930	1,610	2,070	6,440	5,820	1,550	415	145
11	625	5,020	1,430	1,930	5,240	5,940	1,550	385	162
12	475	17,400	1,320	1,740	4,410	6,440	1,800	385	145
13	9,300	9,760	1,220	2,070	3,860	6,320	1,800	355	130
14	19,500	5,130	1,220	2,670	3,680	5,700	1,610	305	162
15	9,140	3,680	1,220	3,500	4,130	5,700	1,490	305	115
16	4,040	3,240	1,270	4,220	4,510	5,470	1,320	305	115
17	3,160	2,830	1,320	4,410	4,320	4,810	1,270	260	115
18	2,070	2,360	1,270	4,320	4,610	4,510	1,220	240	115
19	1,610	2,140	1,220	4,220	4,920	4,040	940	240	115
20	1,430	1,930	1,170	3,500	5,470	3,590	860	282	102
21	17,000	2,360	1,220	3,160	5,700	3,860	755	305	90
22	10,700	2,070	1,270	2,590	4,710	4,610	755	305	90
23	4,810	1,800	1,170	2,590	4,040	5,240	825	305	90
24	3,420	1,670	1,170	2,830	3,590	5,700	860	305	115
25	3,590	1,550	1,030	3,590	3,770	5,240	825	305	80
26	4,710	1,430	1,120	4,220	5,130	4,510	755	260	115
27	4,610	1,320	1,030	4,920	5,470	4,130	688	220	70
28	3,2[illegible]0	1,220	1,030	4,810	4,710	4,040	625	200	80
29	2,210	.....	1,320	4,320	4,130	3,950	535	200	80
30	1,7[illegible]0	.....	1,550	4,920	4,220	3,770	475	200	115
31	2,210	.....	1,320	.....	6,440	.....	475	200	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1	115	102	790	14,600	1,320	1,040	1,930	3,590	3,860	555	220	70
2	115	115	3,500	4,710	1,170	1,170	2,000	3,420	3,500	525	220	51
3	115	115	1,610	2,990	1,120	1,270	2,000	3,680	2,670	525	200	60
4	130	115	985	2,070	1,0[illegible]0	1,430	2,210	2,990	2,280	465	180	60
5	145	115	940	1,670	1,040	1,490	2,510	2,440	2,070	410	180	60
6	162	115	825	1,490	945	1,490	2,510	2,670	1,930	355	162	90
7	180	•115	1,120	1,380	990	1,610	2,360	3,680	1,670	355	162	23
8	162	115	790	1,220	1,080	1,610	2,830	4,710	1,550	355	162	51
9	145	130	14,800	1,170	945	1,7[illegible]0	3,500	4,810	1,430	410	145	60
10	145	260	3,590	1,120	945	1,7[illegible]0	3,770	4,810	1,430	438	180	23
11	180	385	1,800	1,040	905	1,740	3,590	4,610	1,490	410	162	23
12	162	305	1,380	990	905	1,800	2,910	4,320	1,550	410	145	60
13	180	305	1,220	905	905	1,860	2,510	4,810	1,380	410	115	60
14	162	330	1,080	1,170	945	1,860	3,2[illegible]0	4,710	1,270	355	145	60
15	162	305	985	1,930	945	1,740	3,770	5,020	1,170	355	145	60
16	130	282	860	4,710	865	1,490	4,220	5,130	990	355	130	1,380
17	115	260	825	3,240	828	1,430	4,810	4,220	990	355	130	905
18	102	282	790	2,140	828	1,740	5,240	3,950	990	355	130	495
19	115	282	755	1,740	1,040	2,590	5,470	3,680	905	585	130	382
20	115	330	688	1,430	1,080	2,750	5,700	4,130	828	618	145	260
21	115	1,270	720	1,320	945	2,280	5,020	4,040	790	525	115	220
22	115	1,860	625	1,380	905	2,830	5,470	4,320	720	384	80	180
23	115	1,070	625	1,610	945	4,610	5,700	4,220	685	355	80	162
24	115	860	595	2,140	905	3,160	5,940	4,510	650	355	80	145
25	115	1,430	565	2,280	945	2,440	5,700	4,130	650	330	80	130
26	115	1,670	565	1,930	945	2,280	5,940	3,770	650	282	86	130
27	115	1,070	535	1,800	905	1,860	5,580	3,950	720	260	80	145
28	115	790	505	1,670	945	1,740	5,240	3,950	720	260	80	130
29	115	760	505	1,550	.....	1,670	4,610	3,860	650	282	90	130
30	115	790	535	1,430	.....	1,670	3,950	4,040	585	260	80	130
31	130	.....	6,840	1,320	.....	1,740	.....	3,950	.....	240	60	.....

Daily discharge, in second-feet, of Merced River near Merced Falls, Cal., for 1909–1911—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	115	145	220	200	11,800	2,120	4,460	4,160	4,870	4,680	1,060	300
2	115	145	220	220	6,200	4,760	4,560	4,160	5,410	4,790	1,010	300
3	115	162	240	200	3,680	4,760	4,870	4,560	6,920	5,240	925	280
4	102	145	240	180	3,500	9,940	4,360	5,410	7,670	5,010	850	280
5	70	90	305	180	2,760	9,940	5,740	6,680	8,180	5,010	850	262
6	70	130	282	200	2,180	7,800	5,630	5,300	8,700	5,240	815	245
7	102	115	260	200	1,740	16,800	4,460	4,560	8,180	5,120	715	245
8	60	200	282	200	2,060	15,300	4,060	4,660	7,800	4,570	715	210
9	60	162	305	260	1,800	15,100	4,060	5,080	7,540	3,850	715	210
10	60	115	330	1,380	1,630	15,100	4,060	4,870	8,180	3,750	685	195
11	70	200	382	618	2,390	8,180	3,680	5,190	9,380	4,050	655	180
12	80	200	720	865	2,060	5,630	3,410	5,520	10,400	3,750	655	195
13	305	200	495	6,970	2,830	4,260	3,240	5,190	10,500	3,750	595	210
14	305	200	410	2,750	3,680	3,680	3,070	5,190	10,200	3,660	568	180
15	260	200	355	3,160	2,320	3,410	2,990	4,560	9,430	3,750	515	168
16	260	200	305	1,320	1,860	3,240	3,150	3,960	9,580	6,220	490	155
17	260	200	305	755	1,630	3,240	3,320	3,870	9,890	4,360	468	142
18	260	180	260	585	1,470	3,150	3,590	3,780	9,740	4,460	445	155
19	282	200	282	525	1,520	3,320	3,960	4,660	9,580	3,560	445	150
20	260	220	282	685	1,580	3,150	4,060	5,860	9,280	3,030	445	150
21	260	200	260	2,990	1,370	3,240	4,060	6,800	9,130	2,540	445	145
22	260	220	260	1,610	1,320	3,150	4,160	7,540	7,420	2,250	422	155
23	220	200	220	828	1,230	3,150	4,760	8,570	6,480	2,110	400	168
24	220	220	240	6,700	1,280	3,150	5,190	8,180	5,240	2,040	360	228
25	180	282	240	15,200	1,140	3,150	5,630	6,920	4,570	1,920	360	288
26	180	260	240	3,950	1,100	3,240	5,740	5,740	5,720	1,620	360	245
27	162	240	240	2,280	1,100	3,320	4,980	5,970	6,740	1,460	360	228
28	145	220	220	1,490	1,050	3,410	4,360	6,320	6,740	1,510	320	210
29	162	220	200	6,190	.....	3,590	3,960	6,560	5,840	1,300	340	195
30	145	220	200	37,200	.....	3,780	3,870	5,740	5,360	1,200	320	180
31	145	.....	220	36,800	.....	4,160	.....	5,190	.....	1,100	300	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1911.				1911.				1911.			
1	195	142	160	11	183	280	168	21	130	217	135
2	195	155	155	12	210	280	175	22	130	195	120
3	228	130	155	13	168	180	155	23	120	180	124
4	245	135	160	14	168	186	155	24	142	175	142
5	195	142	155	15	228	175	150	25	130	168	142
6	195	130	168	16	170	180	158	26	130	175	155
7	195	142	210	17	160	245	160	27	130	168	128
8	228	130	217	18	155	245	183	28	135	155	138
9	195	135	183	19	135	180	170	29	130	155	245
10	195	168	155	20	100	195	150	30	130	158	186
								31	130	.....	142

NOTE.—Daily discharge determined from fairly well-defined rating curves applicable as follows: Jan. 1, 1909 to Jan. 31, 1911; Feb. 1 to June 13, 1911; June 14 to Dec. 31, 1911.

Monthly discharge of Merced River near Merced Falls, Cal., for 1901–1911.

[Drainage area, 1,090 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1901.							
April	5,000	1,090	2,687	1.55	1.44	133,240	
May	9,450	2,700	5,419	4.97	5.73	333,201	
June	8,220	3,380	5,390	4.94	5.50	320,678	
July	4,560	1,090	2,096	1.92	2.21	128,878	
August	2,090	220	704	.65	.75	43,287	
September	250	130	183	.17	.19	10,889	
The period	.....	.....	.....	.....	.....	970,000	

Monthly discharge of Merced River near Merced Falls, Cal., for 1901–1911—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1901–2.							
October	990	150	265	0.24	0.28	16,294	
November	730	0	399	.37	.41	23,742	
December	2,090	220	577	.53	.61	35,478	
January	410	195	236	.22	.25	14,511	
February	4,020	170	749	.69	.72	41,597	
March	5,720	460	1,364	1.25	1.44	83,869	
April	5,460	730	2,457	2.25	2.51	146,202	
May	6,240	2,180	3,795	3.48	4.01	233,345	
June	5,460	1,220	3,142	2.88	3.21	186,962	
July	1,110	280	481	.44	.51	29,576	
August	320	110	191	.18	.21	11,744	
September	110	65	88	.08	.09	5,236	
The year	6,240	0	1,150	1.05	14.25	829,000	
1902–3.							
October	280	65	90	.08	.09	5,534	
November	1,110	90	246	.23	.26	14,638	
December	1,340	195	303	.28	.32	18,631	
January	8,280	320	1,118	1.03	1.19	68,743	
February	1,920	860	1,105	1.01	1.05	61,369	
March	7,500	930	1,950	1.79	2.06	119,901	
April	11,400	1,510	2,877	2.64	2.95	171,193	
May	7,020	2,030	4,320	3.96	4.57	265,626	
June	5,420	1,420	2,944	2.70	3.01	175,180	
July	1,330	450	696	.64	.74	42,795	
August	450	295	369	.34	.39	22,689	
September	295	260	279	.26	.29	16,602	
The year	11,400	65	1,360	1.25	16.92	883,000	
1903–4.							
October	295	260	275	.25	.29	16,909	
November	600	260	381	.35	.39	22,671	
December	450	320	369	.34	.39	22,689	
January	252	148	189	.17	.20	11,621	
February	4,900	200	1,240	1.14	1.23	71,326	
March	6,050	1,128	2,265	2.08	2.40	139,269	
April	4,800	1,650	2,708	2.48	2.77	161,137	
May	8,780	1,925	5,797	5.32	6.13	356,444	
June	6,160	1,705	3,292	3.02	3.37	195,888	
July	1,650	450	909	.83	.96	55,892	
August	735	200	380	.35	.40	23,365	
September	1,260	80	325	.30	.33	19,339	
The year	8,780	80	1,510	1.39	18.86	1,100,000	
1904–5.							
October	3,460	700	1,511	1.39	1.60	92,908	
November	665	355	471	.43	.48	28,026	
December	1,705	252	361	.33	.38	22,197	
January	580	275	345	.317	.37	21,210	
February	7,760	520	1,105	1.01	1.05	61,370	
March	8,020	790	1,774	1.63	1.88	109,100	
April	3,945	1,400	2,050	1.88	2.10	122,000	
May	5,900	1,820	3,316	3.04	3.50	203,900	
June	4,240	1,755	2,980	2.73	3.05	177,300	
July	1,690	295	804	.738	.85	49,440	
August	275	90	158	.145	.17	9,715	
September	102	35	62.8	.058	.07	3,737	
The year	8,020	35	1,240	1.14	15.50	901,000	
1905–6.							
October	70	50	59.0	.054	.06	3,628	
November	155	50	66.4	.061	.07	3,951	
December	140	70	97.5	.089	.10	5,995	
January	18,400	90	1,840	1.69	1.95	113,000	
February	2,870	465	1,060	.972	1.01	58,900	
March	17,800	1,290	4,660	4.28	4.93	287,000	
April	6,760	2,320	3,500	3.21	3.58	208,000	
May	15,300	3,130	6,530	5.99	6.91	402,000	
June	12,000	4,860	8,410	7.72	8.61	500,000	
July	10,200	2,100	6,260	5.74	6.62	385,000	
August	1,720	425	948	.870	1.00	58,300	
September	425	170	254	.233	.26	15,100	
The year	18,400	50	2,810	2.58	35.10	2,040,000	

Monthly discharge of Merced River near Merced Falls, Cal., for 1901–1911—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1906–7.							
October	155	62	122	0.112	0.13	7,500	
November	240	115	135	.124	.14	8,030	
December	3,620	115	735	.674	.78	45,200	
January	16,200	687	2,040	1.87	2.16	125,000	A.
February	4,710	1,130	2,100	1.93	2.01	117,000	A.
March	27,500	1,230	7,460	6.84	7.89	459,000	A.
April	7,160	3,060	5,490	5.04	5.62	327,000	A.
May	9,590	4,160	6,370	5.84	6.73	392,000	A.
June	10,600	2,970	6,330	5.81	6.48	377,000	A.
July	6,490	1,570	3,460	3.17	3.66	213,000	A.
August	1,640	305	792	.727	.84	48,700	A.
September	330	105	219	.201	.22	13,000	A.
The year	27,500	62	2,940	2.70	36.66	2,130,000	
1907–8.							
October	305	75	135	.124	.14	8,300	A.
November	260	105	154	.141	.16	9,160	A.
December	720	105	308	.283	.33	18,900	A.
January	1,700	305	517	.474	.55	31,800	A.
February	985	240	496	.455	.49	28,500	A.
March	1,510	687	1,040	.954	1.10	64,000	A.
April	3,740	755	1,870	1.72	1.92	111,000	A.
May	3,640	1,280	2,000	1.83	2.11	123,000	A.
June	1,830	755	1,270	1.17	1.30	75,600	A.
July	755	282	488	.448	.52	30,000	A.
August	475	55	203	.186	.21	12,500	A.
September	145	40	93.9	.086	.10	5,590	A.
The year	3,740	40	715	.656	8.93	518,000	
1908–9.							
October	220	40	94.3	.087	.10	5,800	A.
November	130	35	69.3	.064	.07	4,140	A.
December	220	45	105	.096	.11	6,460	A.
January	19,500	80	3,700	3.40	3.92	228,000	A.
February	17,400	1,220	3,230	2.96	3.08	179,000	A.
March	2,070	1,030	1,380	1.27	1.46	84,800	B.
April	4,920	1,270	2,890	2.64	2.94	172,000	A.
May	6,970	3,590	5,220	4.79	5.52	321,000	A.
June	9,920	3,590	5,950	5.46	6.09	354,000	A.
July	3,860	475	1,556	1.42	1.64	95,300	B.
August	475	200	336	.308	.36	20,700	A.
September	260	70	138	.127	.14	8,210	A.
The year	19,500	35	2,060	1.89	25.43	1,480,000	
1909–10.							
October	180	102	133	.122	.14	8,180	A.
November	1,670	102	531	.487	.54	31,600	A.
December	14,800	505	1,680	1.54	1.78	103,000	A.
January	14,600	905	2,260	2.07	2.39	139,000	B.
February	1,320	828	974	.894	.93	54,100	A.
March	4,610	1,040	1,930	1.77	2.04	119,000	A.
April	5,940	1,930	4,010	3.68	4.11	239,000	A.
May	5,130	2,440	4,070	3.73	4.30	250,000	A.
June	3,860	585	1,360	1.25	1.40	80,900	A.
July	618	240	391	.359	.41	24,000	A.
August	220	60	132	.121	.14	8,120	A.
September	1,380	23	191	.175	.20	11,400	A.
The year	14,800	23	1,470	1.35	18.38	1,140,000	
1910–11.							
October	305	60	171	.157	.18	10,500	A.
November	282	90	190	.174	.19	11,300	A.
December	720	200	290	.266	.31	17,800	A.
January	37,200	180	4,410	4.05	4.67	271,000	B.
February	11,800	1,050	2,440	2.24	2.33	136,000	B.
March	16,800	2,120	5,810	5.33	6.14	357,000	A.
April	5,740	2,990	4,250	3.90	4.35	253,000	A
May	8,570	3,780	5,510	5.06	5.83	339,000	A.
June	10,500	4,570	7,820	7.17	8.00	465,000	A.
July	6,220	1,100	3,450	3.17	3.66	212,000	B.

Monthly discharge of Merced River near Merced Falls, Cal., for 1901–1911—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1910–11.							
August	1,060	300	568	0.521	0.60	34,900	B.
September	300	142	208	.191	.21	12,400	B.
The year	37,200	60	2,930	2.69	36.45	2,120,000	
1911.							
October	245	100	167	.153	.18	10,300	B.
November	280	130	177	.162	.18	10,500	B.
December	245	120	161	.148	.17	9,900	B.

MERCED RIVER AT MERCED FALLS, CAL.

The following information regarding records of discharge of Merced River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

The station was located at Merced Falls, a point in the valley above all irrigation diversions. Discharge measurements were made at this station, also at McSwain's ferry[a] and at the Southern Pacific Railroad bridge at Livingston (formerly called Cressy). Daily gage heights were recorded for parts of the period at McSwain's ferry and at the railroad bridge. Occasional observations were made at other times. From these data the discharge was computed for much of the period, the remainder being obtained by the method of discharge per square mile. To these results have been added the discharges diverted by the canals, and thus the tabulated data indicate the quantity of water brought into the valley.

Monthly discharge of Merced River at Merced Falls, Cal., for 1878–1884.

[Drainage area, 1,076 square miles.]

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.				
November[b]	65	0.06	0.07	3,868
December[b]	65	.06	.07	3,997
January[b]	354	.33	.38	21,767
February[b]	1,506	1.40	1.46	83,639
March[b]	2,098	1.95	2.25	129,001
April	3,120	2.90	3.24	185,653
May	3,336	3.10	3.57	205,123
June	3,336	3.10	3.46	198,506
July	968	.90	1.04	59,520
August	172	.16	.18	10,576
September	75	.07	.08	4,463
October	75	.07	.08	4,612
The year	1,260	1.17	15.88	911,000

[a] McSwain's ferry was located 5 miles above the Southern Pacific Railroad crossing, near the center of sec. 9, T. 6 S., R. 12 E.

[b] Estimated from run-off of neighboring streams.

Monthly discharge of Merced River at Merced Falls, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1879–80.				
November	172	0.16	0.18	10,235
December	646	.60	.69	39,721
January	387	.36	.42	23,796
February	753	.70	.75	43,313
March	807	.75	.86	49,621
April	4,250	3.95	4.41	252,893
May	4,842	4.50	5.19	297,723
June	5,111	4.75	5.30	304,126
July	2,744	2.55	2.94	168,722
August	753	.70	.81	46,300
September	323	.30	.33	19,220
October	269	.25	.29	16,540
The year	1,760	1.63	22.17	1,272,000
1880–81.				
November	237	.22	.25	14,102
December	1,291	1.20	1.38	79,380
January	2,044	1.90	2.19	125,681
February	3,443	3.20	3.33	191,214
March	1,560	1.45	1.67	95,921
April	2,798	2.60	2.90	166,493
May[a]	4,412	4.10	4.73	271,283
June[a]	3,336	3.10	3.46	198,506
July[a]	1,506	1.40	1.61	92,600
August	377	.35	.40	23,181
September	129	.12	.13	7,676
October	75	.07	.08	4,612
The year	1,770	1.64	22.13	1,270,000
1881–82.				
November	75	.07	.08	4,463
December	323	.30	.35	19,860
January	172	.16	.18	10,576
February	753	.70	.73	41,820
March	1,506	1.40	1.61	92,600
April	2,260	2.10	2.34	134,479
May	3,658	3.40	3.92	224,922
June	3,336	3.10	3.46	198,506
July	1,076	1.00	1.15	66,161
August	215	.20	.23	13,220
September	129	.12	.13	7,676
October	484	.45	.52	29,760
The year	1,170	1.08	14.70	844,000
1882–83.[a]				
November	387	.36	.40	23,028
December	237	.22	.25	14,573
January	344	.32	.37	21,152
February	355	.33	.34	19,716
March	915	.85	.98	56,261
April	2,260	2.10	2.34	134,479
May	5,488	5.10	5.88	337,444
June	4,412	4.10	4.57	262,532
July	1,184	1.10	1.27	72,801
August	377	.35	.40	23,181
September	237	.22	.25	14,102
October	183	.17	.20	11,252
The year	1,360	1.27	17.25	991,000
1883–84.[a]				
November	161	.15	.17	9,580
December	172	.16	.18	10,576
January	237	.22	.25	14,573
February	2,712	2.52	2.72	155,996
March	3,820	3.55	4.09	234,883
April	4,896	4.55	5.07	291,332
May	5,434	5.05	5.82	334,124
June	6,510	6.05	6.75	387,372
July	4,358	4.05	4.67	267,963
August	1,130	1.05	1.21	69,481
September	237	.22	.25	14,102
October	172	.16	.18	10,576
The year	2,490	2.31	31.36	1,800,000

[a] Estimated from run-off of neighboring streams and from previous measurements.

MERCED RIVER NEAR NEWMAN, CAL.

This station, which is located at the highway bridge in sec. 2, T. 7 S., R. 9 E., 4½ miles northeast of Newman and 1 mile above the junction of Merced River with the San Joaquin, was established April 29, 1912.

The gage is a vertical staff fastened to a willow tree on the right bank 260 feet above the bridge.

The bed of the stream is composed of sand, which probably shifts somewhat.

Discharge measurements are made from the highway bridge.

The station is maintained only during the low-water season; at high stages it is within the influence of backwater from the San Joaquin.

Record of gage heights and discharge measurements has been furnished through Frank Adams, irrigation manager, Office of Experiment Stations, United States Department of Agriculture.

Estimates of daily and monthly discharge are withheld until additional discharge measurements can be made.

Discharge measurements of Merced River near Newman, Cal., in 1912.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-feet.*
Apr. 30	Harry Barnes	2.20	353
May 16	do	6.26	2,640
June 12[a]	do	8.85	2,310

[a] Measurement affected by backwater from San Joaquin River.

Daily gage height, in feet, of Merced River near Newman, Cal., for 1912.

Day.	Apr.	May.	June.	Day.	Apr.	May.	June.	Day.	Apr.	May.	June.
1	.....	2.75	7.60	11	.....	3.20	8.65	21	.....	6.55	5.92
2	.....	2.50	8.40	12	.....	4.20	8.90	22	.....	5.80	5.60
3	.....	2.60	8.92	13	.....	5.00	9.10	23	.....	5.20	5.20
4	.....	2.35	9.30	14	.....	5.30	9.12	24	.....	4.70	4.80
5	.....	2.20	9.30	15	.....	5.75	8.95	25	.....	4.70	4.50
6	.....	2.40	9.10	16	.....	6.30	8.70	26	.....	5.02	3.95
7	.....	2.52	9.20	17	.....	6.60	8.20	27	.....	4.90	3.40
8	.....	2.60	9.15	18	.....	6.90	7.45	28	.....	5.10	3.10
9	.....	3.05	8.95	19	.....	7.20	6.80	29	1.98	6.10	2.80
10	.....	3.10	8.70	20	.....	7.22	6.32	30	2.20	7.30	2.52
								31	.....	7.60	.....

TENAYA CREEK NEAR YOSEMITE, CAL.

This station, which is located at the highway bridge about 1¾ miles east of Yosemite and three-fourths of a mile above the junction of the creek with Merced River, was established January 4, 1912. Incomplete records of stage of the creek were kept from July, 1904, to June, 1909.

The drainage area above the station comprises 47 square miles.

The gage is a vertical staff fastened near the left abutment on the upstream side of the bridge.

The bed of the stream is composed of small bowlders and gravel and is fairly permanent.

Discharge measurements are made from the downstream side of the bridge.

Relation between gage height and discharge during the winter months is probably slightly affected by ice.

The gage-height record is furnished by officials of the Yosemite National Park. Results are good.

Discharge measurements of Tenaya Creek near Yosemite, Cal., 1904–1912.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1904.		*Feet.*	*Sec.-feet.*	1907.		*Feet.*	*Sec.-feet.*
July 11	N. W. Currie	4.42	85	May 23	Martin and Tucker.	5.83	475
19	do	4.00	45	25	W. F. Martin	6.03	530
1905.				June 4	C. W. Tucker	7.05	949
June 7	W. B. Clapp	5.95	400	24	do	6.05	562
14	N. W. Currie	6.00	428	Aug. 16	Clapp and Hardy	3.75	35
19	do	5.65	333	1908.			
24	do	5.18	221	Aug. 4	W. V. Hardy	3.13	3.1
28	do	4.80	145	1909.			
July 5	do	4.40	81	June 24	W. V. Hardy	6.53	716
12	do	4.10	44	1911.			
24	do	3.60	14.1	July 16	G. T. Peekema	5.58	325
Oct. 1	do	3.35	*a* 3	Aug. 19	H. J. Tompkins	3.50	11
1906.				1912.			
June 11	C. W. Tucker	7.20	891	Jan. 5	J. E. Stewart	3.52	2.6
1907.				June 18	F. C. Ebert	4.88	176
May 7	C. W. Tucker	5.50	378				
19	do	6.85	863				

a Estimated.

Daily gage height, in feet, of Tenaya Creek near Yosemite, Cal., for 1904–1909 and 1912.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1904.				1904.			
1		3.8	3.4	16	4.1	3.8	3.4
2		3.85	3.4	17	4.08	3.7	3.4
3		3.7	3.4	18	4.02	3.6	3.4
4		3.9	3.4	19	4.0	3.55	3.4
5		3.75	3.4	20	4.0	3.5	3.4
6		3.7	3.4	21	4.0	3.5	3.4
7		3.7	3.4	22	4.0	3.5	3.4
8		3.6	3.4	23	3.9	3.5	
9		3.6	3.38	24	3.9	3.5	4.4
10		3.6	3.38	25	3.9	3.5	
11	4.4	3.6	3.4	26	3.85	3.45	
12	4.4	3.5	3.4	27	3.8	3.45	
13	4.3	3.5	3.4	28	3.8	3.45	
14	4.2	3.5	3.4	29	3.75	3.4	
15	4.2	3.8	3.4	30	3.7	3.4	
				31	3.7	3.4	

Daily gage height, in feet, of Tenaya Creek near Yosemite, Cal., for 1904–1909 and 1912— Continued.

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1905.					1905.				
1	5.9	4.7	3.5	3.35	16	5.9	3.85	3.38	3.35
2	5.9	4.6	3.5	3.35	17	5.8	3.85	3.38	3.35
3	5.9	4.5	3.5	3.35	18	5.75	3.8	3.38	.....
4	5.7	4.4	3.45	3.35	19	5.65	3.75	3.38	.....
5	5.6	4.4	3.45	3.35	20	5.55	3.7	3.38	.....
6	5.7	4.35	3.4	3.35	21	5.55	3.7	3.38	.....
7	6.0	4.3	3.4	3.35	22	5.5	3.65	3.38	.....
8	5.8	4.25	3.4	3.35	23	5.3	3.6	3.38	3.35
9	5.75	4.2	3.4	3.35	24	5.18	3.6	3.38	3.35
10	6.0	4.1	3.4	3.35	25	5.1	3.6	3.38	.....
11	6.01	4.1	3.38	3.35	26	5.0	3.55	3.38	.....
12	6.0	4.1	3.38	3.35	27	4.9	3.55	3.38	.....
13	6.15	4.0	3.38	3.35	28	4.83	3.55	3.38	.....
14	5.98	3.95	3.38	3.35	29	4.8	3.5	3.35	.....
15	5.95	3.9	3.38	3.35	30	4.7	3.5	3.35	3.35
					31	.....	3.5	3.35	.....

Day.	Oct., 1905.	May.	June.	July.	Aug.	Sept.	Day.	Oct., 1905.	May.	June.	July.	Aug.	Sept.
1905–6.							1905–6.						
1	3.35	.....	5.6	7.1	4.6	3.5	16	.....	.....	8.1	6.3	4.0	3.0
2	.....	.....	5.7	7.2	4.4	3.4	17	.....	.....	7.8	6.2	4.0	3.0
3	.....	.....	6.0	7.3	4.5	3.4	18	.....	.....	7.3	6.1	3.9	3.0
4	.....	.....	6.0	7.2	4.4	3.3	19	.....	.....	7.1	6.0	3.8	3.0
5	.....	.....	6.3	7.2	4.3	3.2	20	.....	.....	7.5	5.8	3.9	3.0
6	.....	.....	6.0	7.1	4.4	3.2	21	3.35	.....	7.4	5.6	3.8	3.0
7	3.35	.....	6.1	7.2	4.4	3.1	22	.....	.....	7.3	5.5	3.8	3.0
8	.....	.....	6.3	7.1	4.3	3.0	23	.....	.....	7.4	5.5	3.8	3.0
9	.....	.....	6.7	7.0	4.3	3.0	24	.....	.....	7.4	5.4	3.7	3.0
10	3.35	.....	6.8	6.7	4.4	3.0	25	.....	6.2	7.5	5.5	3.6	3.0
11	.....	.....	6.9	6.6	4.3	3.0	26	.....	6.1	6.1	5.7	3.6	3.0
12	.....	.....	6.9	7.0	4.2	2.9	27	.....	5.9	6.0	5.7	3.5	3.0
13	.....	.....	7.0	7.1	4.2	3.0	28	.....	5.7	6.4	5.2	3.5	3.0
14	3.35	.....	7.1	7.0	4.1	3.0	29	.....	5.5	6.6	5.0	3.4	3.0
15	3.35	.....	7.4	6.5	4.1	3.1	30	.....	5.5	6.9	4.7	3.4	3.0
							31	.....	5.5	.....	4.7	3.4	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.												
1	3.0	3.0	3.0	.....	.....	.....	.....	5.7	6.9	5.9	4.5	3.4
2	3.0	3.0	3.0	.....	.....	.....	.....	5.7	6.9	6.0	4.4	3.4
3	3.0	3.0	3.0	.....	.....	3.9	.....	5.5	7.0	5.8	4.3	3.4
4	3.0	3.2	3.0	3.6	.....	.....	.....	5.4	7.1	6.0	4.2	3.4
5	2.9	3.2	3.0	.....	.....	.....	.....	5.5	7.0	6.1	4.2	3.4
6	2.9	3.1	3.0	.....	.....	.....	.....	5.4	6.4	6.0	4.1	3.3
7	2.9	3.1	3.0	.....	.....	.....	.....	5.3	6.5	6.0	4.0	3.3
8	2.9	3.0	3.0	.....	4.2	.....	.....	5.2	6.4	5.9	4.0	3.3
9	2.9	3.0	3.0	.....	.....	.....	.....	5.4	6.1	5.9	3.9	3.3
10	2.9	3.0	3.0	3.6	.....	.....	.....	5.6	6.5	5.9	3.9	3.3
11	2.9	3.0	3.0	.....	.....	.....	.....	5.5	6.3	5.8	3.8	3.2
12	2.9	3.0	.....	.....	.....	.....	.....	5.5	6.4	5.6	3.8	3.2
13	2.9	3.0	.....	.....	4.0	.....	.....	5.4	5.6	5.5	3.8	3.2
14	3.0	3.0	.....	.....	.....	.....	.....	5.4	5.2	5.4	3.8	3.2
15	3.0	3.0	.....	.....	.....	.....	.....	5.7	5.1	5.4	3.9	3.2
16	2.9	3.0	.....	.....	.....	.....	.....	6.1	5.2	5.2	3.8	3.2
17	2.9	3.0	.....	.....	.....	.....	.....	6.2	5.4	5.2	3.9	3.2
18	3.0	3.0	.....	.....	4.1	6.7	.....	6.4	5.5	5.1	3.9	3.2
19	2.9	3.0	.....	.....	.....	.....	.....	6.5	5.8	5.0	3.8	3.2
20	2.9	3.0	.....	.....	.....	.....	.....	6.2	6.0	5.0	3.7	3.1
21	2.9	3.0	.....	.....	.....	.....	.....	6.0	6.3	4.9	3.7	3.1
22	2.9	3.0	.....	.....	.....	4.8	.....	5.6	6.3	4.8	3.6	3.1
23	3.0	3.0	.....	.....	.....	.....	.....	5.8	6.1	.....	3.6	3.1
24	2.9	3.0	.....	.....	.....	.....	.....	6.0	6.0	.....	3.5	3.1
25	2.9	3.0	.....	.....	.....	.....	.....	6.0	6.1	.....	3.5	3.1

Daily gage height, in feet, of Tenaya Creek near Yosemite, Cal., for 1904–1909 and 1912— Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.												
26	2.9	3.0						6.4	6.3	4.7	3.5	3.1
27	3.0	3.0			4.0			6.5	6.4	4.7	3.4	3.1
28	2.9	3.0						6.7	6.3	4.7	3.5	3.1
29	2.9	3.0						6.7	6.2	4.6	3.5	3.1
30	3.0	3.0		4.0		4.3		6.9	6.5	4.6	3.5	3.1
31	3.0							7.0		4.5	3.5	
1907–8.												
1			3.2							4.2	3.7	3.3
2		3.3								4.2	3.6	3.3
3								4.4		4.3	3.6	3.3
4				3.7				4.6		4.4	3.6	3.2
5								4.7		4.6	3.6	
6								4.8		4.5	3.6	
7								4.5		4.6	3.5	
8			3.4					4.5		4.7	3.5	
9	3.2							4.5		4.7	3.5	
10								4.6		4.7	3.5	
11								4.6		4.6	3.4	
12		3.2						4.4		4.7	3.4	
13				3.7				4.4		4.6	3.3	
14								4.3		4.6	3.3	
15								4.2		4.4	3.3	
16			3.8					4.3		4.3	3.3	
17	3.3							4.3		4.3	3.2	
18								4.3		4.2	3.2	
19		3.2						4.1		4.1	3.2	
20			3.6	3.7				4.2		4.1	3.2	
21								4.3		4.0	3.2	
22								4.3		4.0	3.1	
23								4.5		3.9	3.1	
24								4.4		3.8	3.1	
25								4.5		3.8	3.1	
26								4.6		3.7	3.1	
27	3.7							4.6		3.7	3.1	
28				5.7				4.6		3.7	3.1	
29			3.8					4.5		3.7	3.1	
30		3.2						4.3		3.7	3.6	
31								4.1			3.4	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1908–9.									
1						3.8			
2									
3			3.0						
4									
5					4.0				
6									
7		3.0							
8									
9									
10									
11									
12						4.0			
13	3.2								
14				5.3			5.0		
15					3.9				
16			3.0						
17									
18			2.9				5.6		
19				4.3	3.7				
20									
21									
22									
23	3.1	3.0							
24									6.55
25									
26									
27									
28					3.9	3.8			
29				4.1					
30							6.0		
31									

Daily gage height, in feet, of Tenaya Creek near Yosemite, Cal., for 1904–1909 and 1912— Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.
1912.							1912.						
1	.....	3.75	3.70	4.1	4.55	7.0	16	3.68	3.73	3.90	4.3	6.4	5.1
2	.....	3.73	3.70	4.3	4.55	6.6	17	3.68	3.75	3.99	4.2	6.6	5.0
3	.....	3.73	3.67	4.3	4.45	6.5	18	3.68	3.79	3.91	4.25	6.4	4.9
4	.....	3.72	3.71	4.3	4.55	6.6	19	3.68	3.78	3.99	4.2	5.9	4.9
5	3.52	3.75	3.77	4.25	4.6	6.8	20	3.68	3.77	3.98	4.1	5.4	4.8
6	.....	3.75	3.90	4.35	4.7	6.4	21	3.68	3.75	3.92	4.1	5.4	4.8
7	.....	3.74	3.88	4.5	4.95	6.3	22	3.68	3.71	3.91	4.1	5.2	4.8
8	3.52	3.74	3.89	4.65	5.2	6.2	23	3.68	3.72	3.93	4.3	5.0	4.75
9	3.52	3.73	3.88	4.6	5.2	5.6	24	3.68	3.70	3.97	4.1	5.2	4.65
10	3.59	3.72	3.93	4.5	5.6	5.5	25	3.69	3.69	4.0	4.35	5.2	4.5
11	3.58	3.75	3.90	4.5	5.7	5.5	26	3.69	3.68	4.05	4.3	5.3	4.4
12	3.59	3.76	3.91	4.3	5.9	5.3	27	3.70	3.67	4.0	4.3	6.0	4.3
13	3.59	3.77	3.91	4.25	6.1	5.2	28	3.70	3.68	4.05	4.45	6.3	4.3
14	3.60	3.74	3.88	4.3	6.2	5.2	29	3.71	3.69	4.15	4.45	6.3	4.15
15	3.66	3.75	3.90	4.3	6.4	5.2	30	3.72	.....	4.05	4.45	6.3	4.1
							31	3.73	.....	4.05	.....	6.9	.....

Rating tables for Tenaya Creek near Yosemite, Cal.

July 1, 1904, to Dec. 31, 1905.[a]

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
3.40	4.5	4.20	54	5.00	184	5.80	368
3.50	8	4.30	66	5.10	204	5.90	395
3.60	12	4.40	80	5.20	225	6.00	422
3.70	17	4.50	95	5.30	247	6.10	450
3.80	22	4.60	111	5.40	270	6.20	480
3.90	28	4.70	128	5.50	293	6.30	512
4.00	35	4.80	146	5.60	317		
4.10	44	4.90	165	5.70	342		

Jan. 1 to June 16, 1906.[b]

5.50	293	6.20	480	6.90	722	7.60	1,035
5.60	317	6.30	512	7.00	760	7.70	1,080
5.70	342	6.40	544	7.10	800	7.80	1,125
5.80	368	6.50	578	7.20	840	7.90	1,175
5.90	395	6.60	612	7.30	882	8.00	1,225
6.00	422	6.70	648	7.40	946	8.10	1,275
6.10	450	6.80	684	7.50	990		

June 17, 1906, to July 31, 1909.[c]

2.90	0.5	4.00	63	5.10	274	6.40	667
3.00	1.0	4.10	76	5.20	301	6.60	740
3.10	2.0	4.20	90	5.30	328	6.80	820
3.20	4.0	4.30	105	5.40	356	7.00	900
3.30	7.0	4.40	121	5.50	384	7.20	980
3.40	11	4.50	138	5.60	413	7.40	1,060
3.50	16	4.60	156	5.70	442	7.60	1,150
3.60	22	4.70	176	5.80	472	7.80	1,240
3.70	30	4.80	198	5.90	502		
3.80	40	4.90	222	6.00	533		
3.90	51	5.00	248	6.20	598		

[a] This table is applicable only for open channel. It is based on 11 discharge measurements made during 1904–5. It is well defined between gage heights 3.3 feet and 6 feet.

[b] This table is not applicable for obstructed channel. It is based on discharge measurements made during 1904 to 1906, and is well defined between gage heights 3.35 feet and 6.0 feet. Below 6.40 feet it is the same as the 1905 table.

[c] This table is not applicable for periods during which ice was present or channel was otherwise obstructed. It is based on eight discharge measurements made during 1907 and 1908 and the general form of the previous curve. It is fairly well defined above gage height 3.1 feet.

Daily discharge, in second-feet, of Tenaya Creek near Yosemite, Cal., for 1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.
1	.....	26	22	56	114	835	16	21	24	37	79	590	216
2	.....	24	22	79	114	670	17	21	26	36	67	670	195
3	.....	24	20	79	99	630	18	21	28	38	73	590	175
4	.....	23	23	79	114	670	19	21	28	45	67	420	175
5	12	26	27	73	121	750	20	21	27	44	56	285	156
6	12	26	37	86	138	590	21	21	26	39	56	285	156
7	12	25	35	106	185	555	22	21	23	38	56	238	156
8	12	25	36	130	238	520	23	21	23	40	79	195	147
9	12	24	35	121	238	335	24	21	22	43	56	238	130
10	16	23	40	106	335	310	25	21	21	46	86	238	106
11	15	26	37	106	360	310	26	21	21	51	79	261	92
12	16	26	38	79	420	261	27	22	20	46	79	450	79
13	16	27	38	73	485	238	28	22	21	51	99	555	79
14	16	25	35	79	520	238	29	23	21	62	99	555	62
15	20	26	37	79	590	238	30	23	.....	51	99	555	56
							31	24	.....	51	.....	790	.....

NOTE.—Daily discharge determined from a well-defined rating curve.

Monthly discharge of Tenaya Creek near Yosemite, Cal., for 1904–1908 and 1912.

[Drainage area, 47 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1904–5.							
July 11–31	80	17	38.3	0.815	0.33	1,595	
August	28	4.5	12.3	.262	.30	756	
September 1–24	80	3.9	8.6	.183	.16	409	
May 23–31	512	368	425	9.04	3.03	7,587	
June	465	128	323	6.88	7.68	19,220	
July	128	8	38.8	.828	.95	2,386	
August	8	3	4.4	.094	.11	270	
September	3	3	3.0	.064	.07	179	
1905–6.							
October 1–21	3	3	3.0	.064	.05	125	
May 25–31	480	293	424	9.02	2.35	5,050	B.
June	1,280	317	764	16.3	18.19	45,500	B.
July	1,020	176	649	13.8	15.91	39,900	B.
August	156	11	70.3	1.48	1.71	4,320	B.
September	16	.5	2.62	.056	.06	156	C.
1906–7.							
October	1.0	.5	.53	.011	.01	33	D.
November	4.0	1.0	1.27	.027	.03	76	C.
December 1–11	1.0	1.0	1.00	.021	.01	22	C.
January	.....	.....	36	.766	.88	2,210	D.
February	.....	.....	73	1.55	1.61	4,050	D.
March	.....	.....	280	5.96	6.87	17,200	D.
May	900	301	516	10.9	12.57	31,700	B.
June	940	274	609	12.9	14.39	36,200	B.
July	565	138	338	7.19	8.29	20,800	B.
August	138	11	47.4	1.01	1.16	2,910	B.
September	11	2	4.93	.105	.12	293	C.
The period	.....	.....	.....	.....	.....	115,000	
1907–8.[a]							
October	.....	.....	14	.298	.34	861	D.
November	.....	.....	5.0	.106	.12	298	D.
December	.....	.....	24	.511	.59	1,480	D.
May	198	76	125	2.66	3.07	7,690	B.
June	176	30	100	2.13	2.38	5,950	B.
July	30	2	10.4	.221	.25	640	C.
August	.....	.....	6.0	.128	.15	369	D.
October	.....	.....	3.0	.064	.07	184	D.
November	.....	.....	1.0	.021	.02	60	D.
December	.....	.....	.9	.019	.02	55	D.

[a] From January to March and October to December, 1907, and for August and October to December, 1908, the mean of days when record was obtained was taken as mean for month.

Monthly discharge of Tenaya Creek near Yosemite, Cal., for 1904–1908 and 1912—Con.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1912.							
January 5–31	24	12	18.7	0.398	0.40	1,000	B.
February	28	20	24.4	.519	.56	1,400	B.
March	62	20	38.7	.823	.95	2,380	B.
April	130	56	82.0	1.74	1.94	4,880	A.
May	790	99	354	7.53	8.68	21,800	A.
June	835	56	304	6.47	7.22	18,100	A.
The period						49,600	

YOSEMITE CREEK AT YOSEMITE, CAL.

This station, which is located at the highway bridge about one-fourth mile northwest of Yosemite and half a mile above the junction of the creek with Merced River, was established January 4, 1912. Incomplete records of stage of Yosemite Creek were kept from July 1, 1904, to June, 1909.

The original gage was a vertical staff fastened to an alder on the right bank 50 feet above the bridge. On January 4, 1912, a new vertical staff was fastened to a cottonwood tree on the right bank 25 feet above the bridge. The datum of the new gage is approximately the same as the original datum.

The bed of the stream is composed of fine gravel and sand. It shifts somewhat.

Discharge measurements are made from the downstream side of the bridge.

The relation between gage height and discharge during the winter months is probably affected by ice.

Sufficient discharge measurements have not yet been made to define a rating curve for the station.

The gage-height record is furnished by officials of the Yosemite National Park.

Discharge measurements of Yosemite Creek at Yosemite, Cal., 1904–1912.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1904.		*Feet.*	*Sec.-ft.*	1907.		*Feet.*	*Sec.-ft.*
July 9	A. E. Chandler	4.85	70	June 3	C. W. Tucker	9.85	710
19	N. W. Currie	4.49	33	25	do	7.55	349
1905.				Aug. 6	do	6.1	69
June 7	W. B. Clapp	6.05	232	16	Clapp and Hardy	5.9	34
13	N. W. Currie	6.55	290	1908.			
19	do	5.78	208	June 6	C. W. Tucker	6.5	115
24	do	5.4	141	Aug. 4	Tucker and Hardy	5.4	3.7
27	do	5.15	117	1909.			
July 4	do	4.75	66	June 27	W. V. Hardy	8.2	278
14	do	4.3	30	1911.			
23	do	4.1	14.7	July 16	G. T. Peekema	8.38	227
Aug. 1	do	4.9	2.3	Aug. 18	H. J. Tompkins	6.10	12
1907.				1912.			
May 5	C. W. Tucker	7.65	353	Jan. 5	J. E. Stewart	5.75	.6
21	do	8.7	622	June 18	F. C. Ebert	7.11	124
23	Tucker and Martin	7.7	409				
25	W. F. Martin	9.0	825				

NOTE.—New gage installed Jan. 4, 1912, at approximately the same datum as the old gage.

Daily gage height, in feet, of Yosemite Creek at Yosemite, Cal., for 1904–1909 and 1912.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1904.				1904.			
1	.....	4.3	3.8	16	4.5	4.05	3.8
2	.....	4.7	3.8	17	4.4	3.9	3.75
3	.....	4.3	3.8	18	4.4	3.9	3.8
4	.....	4.3	3.8	19	4.5	3.9	3.75
5	.....	4.15	3.75	20	4.45	3.9	3.75
6	.....	4.18	3.75	21	4.4	3.85	3.75
7	.....	.....	3.75	22	4.4	3.8	3.75
8	.....	4.0	3.75	23	4.38	3.85	3.85
9	.....	4.0	3.75	24	4.38	3.84	4.6
10	.....	3.95	3.75	25	4.3	3.85	.....
11	4.6	3.9	3.75	26	4.2	3.8	.....
12	4.7	3.9	3.75	27	4.05	3.8	.....
13	4.7	3.9	3.75	28	4.1	3.8	.....
14	4.55	3.9	3.75	29	4.0	3.8	.....
15	4.5	4.0	3.75	30	4.0	3.8	.....
				31	4.0	3.8	.....

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1905.						1905.					
1	.....	6.3	5.0	3.9	3.7	16	.....	6.35	4.25	3.79	3.7
2	.....	6.4	4.9	3.7	3.7	17	.....	6.0	4.2	3.79	3.7
3	.....	6.3	4.8	3.85	3.7	18	.....	5.9	4.2	3.79	.....
4	.....	5.95	4.75	3.85	3.7	19	.....	5.78	4.2	3.75	.....
5	.....	5.8	4.75	3.85	3.7	20	.....	5.75	4.2	3.75	.....
6	.....	5.9	4.75	3.8	3.7	21	.....	5.9	4.18	3.75	.....
7	.....	6.2	4.7	3.8	3.7	22	.....	5.7	4.15	3.75	3.65
8	.....	6.1	4.7	3.7	3.7	23	6.7	5.4	4.1	3.75	.....
9	.....	6.0	4.75	3.8	3.7	24	6.7	5.4	4.1	3.75	3.65
10	.....	6.5	4.7	3.8	3.7	25	6.8	5.25	4.0	3.75	.....
11	.....	6.3	4.6	3.8	3.7	26	6.8	5.3	4.0	3.75	.....
12	.....	6.4	4.5	3.8	.....	27	6.3	5.15	4.0	3.72	.....
13	.....	6.55	4.4	3.78	3.7	28	6.2	5.0	3.95	3.7	3.7
14	.....	6.35	4.3	3.8	3.7	29	6.0	5.2	3.95	3.7	.....
15	.....	6.35	4.25	3.8	3.7	30	6.3	5.0	3.9	3.7	3.7
						31	6.3	.....	3.9	3.7	.....

Day.	Oct.	May.	June.	July.	Aug.	Sept.	Day.	Oct.	May.	June.	July.	Aug.	Sept.
1905–6.							1905–6.						
1	3.7	.....	6.4	9.2	5.8	5.2	16	.....	.....	11.15	7.2	5.3	5.0
2	.....	.....	6.5	9.5	5.7	5.2	17	.....	.....	9.3	7.1	5.3	5.0
3	3.65	.....	7.0	9.4	5.6	5.1	18	.....	.....	9.1	7.1	5.3	5.0
4	.....	.....	7.1	9.4	5.6	5.1	19	.....	.....	9.8	6.8	5.3	5.0
5	.....	.....	7.4	9.6	5.6	5.1	20	.....	.....	9.7	6.8	5.3	5.0
6	.....	.....	7.0	9.5	5.5	5.1	21	3.65	.....	9.9	6.7	5.4	5.0
7	3.65	.....	6.9	9.4	5.6	5.0	22	.....	.....	9.9	6.7	5.3	5.0
8	.....	.....	7.1	9.2	5.5	5.0	23	.....	7.5	9.8	6.6	5.2	5.0
9	.....	.....	7.9	9.1	5.4	5.0	24	3.65	7.05	9.7	6.6	5.2	5.0
10	.....	.....	8.0	8.8	5.5	5.0	25	.....	7.0	9.8	6.7	5.1	5.0
11	.....	.....	8.9	8.9	5.5	5.0	26	.....	7.0	7.7	6.9	5.1	5.0
12	.....	.....	9.8	8.0	5.4	5.0	27	.....	6.5	7.4	6.4	5.1	5.0
13	.....	.....	9.4	8.1	5.3	5.0	28	.....	6.4	7.1	6.2	5.1	5.0
14	3.65	.....	8.8	8.0	5.4	5.0	29	.....	[a]9.0	7.4	5.9	5.1	5.0
15	.....	.....	8.7	7.4	5.4	5.0	30	.....	6.0	7.7	5.7	5.1	5.0
							31	.....	6.1	.....	6.0	5.1	.....

[a] Backwater from snow.

NOTE.—There was practically no flow from Sept. 1 to Dec. 31, 1906.

Daily gage height, in feet, of Yosemite Creek at Yosemite, Cal., for 1904–1909 and 1912— Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.												
1	[a] 5.0	5.0	5.0	.....	.....	5.7	.....	8.0	9.5	8.2	6.2	5.6
2	5.0	5.0	5.0	.....	.....	5.6	.....	8.5	9.7	8.3	6.3	5.6
3	5.0	5.0	5.0	5.3	.....	.....	.....	8.3	9.9	8.2	6.2	5.6
4	5.0	5.2	5.0	.....	.....	.....	.....	8.0	9.8	8.7	6.2	5.6
5	5.0	5.1	5.0	.....	.....	.....	.....	7.6	9.4	8.4	6.2	5.6
6	5.0	5.1	5.0	.....	.....	5.7	.....	7.4	8.6	8.4	6.1	5.6
7	5.0	5.1	5.0	.....	5.9	.....	.....	7.8	8.4	8.0	6.1	5.6
8	5.0	5.0	5.0	.....	.....	.....	.....	8.0	8.2	7.8	6.0	5.6
9	5.0	5.0	5.0	.....	.....	.....	.....	7.8	7.9	7.6	6.0	5.6
10	5.0	5.0	5.0	.....	.....	.....	.....	8.0	8.3	7.6	6.0	5.6
11	5.0	5.0	5.0	5.3	.....	.....	.....	8.3	8.2	7.4	5.9	5.6
12	5.0	5.0	.....	.....	.....	5.6	.....	8.0	8.5	7.4	5.9	5.6
13	5.0	5.0	.....	.....	.....	.....	.....	7.4	7.6	7.2	5.9	5.6
14	5.0	5.0	.....	.....	.....	5.6	.....	7.2	7.5	7.1	5.9	5.6
15	5.0	5.0	.....	.....	.....	.....	.....	7.8	7.3	7.0	6.0	5.5
16	5.0	5.0	.....	.....	.....	.....	.....	8.5	7.5	7.0	5.9	5.5
17	5.0	5.0	.....	.....	.....	7.6	.....	8.7	7.4	6.9	5.9	5.5
18	5.0	5.0	.....	.....	.....	8.5	.....	9.0	7.5	6.8	5.9	5.5
19	5.0	5.0	.....	.....	.....	9.7	.....	9.5	7.7	6.9	5.9	5.5
20	5.0	5.0	.....	.....	.....	.....	.....	9.0	8.0	6.9	5.8	5.5
21	5.0	5.0	.....	.....	5.7	10.0	.....	8.6	8.2	6.7	5.8	5.4
22	5.0	5.0	.....	5.3	.....	.....	.....	8.1	8.3	6.5	5.8	5.4
23	5.0	5.0	.....	.....	.....	.....	.....	7.7	7.9	.....	5.7	5.4
24	5.0	5.0	.....	.....	.....	.....	.....	7.9	7.6	.....	5.7	5.4
25	5.0	5.0	.....	.....	.....	11.0	.....	9.0	7.9	.....	5.7	5.4
26	5.0	5.0	.....	.....	.....	.....	.....	8.4	8.0	6.6	5.7	5.4
27	5.0	5.0	.....	.....	5.7	.....	.....	8.5	8.2	6.6	5.6	5.4
28	5.0	5.0	.....	.....	.....	.....	.....	8.6	8.4	6.6	5.7	5.4
29	5.0	5.0	.....	.....	.....	.....	.....	8.6	8.3	6.6	5.7	5.4
30	4.9	5.0	.....	.....	.....	.....	.....	8.8	8.5	6.5	5.7	5.4
31	4.9	.....	.....	.....	.....	6.3	.....	9.9	.....	6.3	5.7	.....
1907–8.												
1	.....	.....	.....	.....	.....	.....	.....	.....	6.5	5.7	5.6	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	6.6	5.7	5.5	.....
3	.....	5.5	.....	.....	.....	.....	.....	6.9	6.4	5.6	5.5	.....
4	.....	.....	.....	.....	.....	.....	.....	7.0	6.4	5.6	5.4	.....
5	.....	.....	.....	5.7	.....	.....	.....	7.2	6.4	5.6	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	7.3	6.5	5.5	.....	.....
7	.....	.....	5.6	.....	.....	.....	.....	7.0	6.5	5.5	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	6.8	6.5	5.4	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	6.8	6.6	5.4	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	6.8	6.6	5.4	.....	.....
11	5.3	.....	.....	.....	.....	.....	.....	6.7	6.7	5.4	.....	.....
12	.....	5.3	.....	5.7	.....	.....	.....	6.7	6.7	5.4	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	6.6	6.8	5.4	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	6.5	6.7	5.4	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	6.6	6.6	5.4	.....	.....
16	.....	.....	5.7	.....	.....	.....	.....	6.7	6.5	5.4	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	6.6	6.4	5.4	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	6.5	6.3	5.4	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	6.5	6.3	5.4	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	6.6	6.3	5.4	.....	.....
21	.....	5.3	5.7	.....	.....	.....	.....	6.6	6.2	5.4	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	6.7	6.2	5.4	.....	.....
23	5.3	.....	.....	.....	.....	.....	.....	6.9	6.1	5.4	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	7.0	6.1	5.4	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	7.1	6.0	5.4	.....	.....
26	.....	.....	.....	5.7	.....	.....	.....	7.0	6.0	5.4	.....	.....
27	5.8	.....	.....	.....	.....	.....	.....	7.1	5.9	5.4	.....	.....
28	5.7	.....	.....	.....	.....	.....	.....	7.2	5.9	5.4	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	7.0	5.9	5.5	5.2	.....
30	.....	5.3	.....	.....	.....	.....	.....	6.8	5.8	5.9	.....	5.2
31	5.6	.....	5.7	.....	.....	.....	.....	6.6	.....	5.8	.....	.....

[a] No discharge Nov. 12, 1906. Practically no flow September to December, 1906.

Daily gage height, in feet, of Yosemite Creek at Yosemite, Cal., for 1904–1909 and 1912— Continued.

Day.	Oct	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908–9.												
1												
2									12.0			
3						5.6						
4	5.4				5.4							
5			5.5									
6												
7								9.3				
8												
9						5.9	7.0					
10		5.2										
11												
12												
13												
14				8.5	5.1							
15							8.0					
16	5.6											
17					5.2							
18						6.3						
19				6.9								
20	5.3						8.7					
21												
22			5.4									
23												
24		5.3										
25						6.0						
26												
27				5.7					8.2			
28					5.4							
29												
30							9.0					
31	5.3											

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.
1912.							1912.						
1		6.01	6.10	6.68	6.80	9.90	16	5.80	6.11	6.17	6.45	9.45	7.10
2		6.05	6.04	6.80	6.75	10.15	17	5.82	6.11	6.19	6.46	9.40	7.00
3		6.07	6.06	6.80	6.78	9.85	18	5.82	6.16	6.2	6.48	9.41	7.10
4	5.75	5.92	6.10	6.80	6.80	9.30	19	5.84	6.20	6.28	6.49	8.75	7.18
5	5.75	6.10	6.12	6.79	6.82	9.35	20	5.90	6.20	6.27	6.50	7.80	7.00
6	5.75	6.10	6.12	6.79	7.90	9.50	21	5.90	6.20	6.28	6.50	7.55	6.94
7	5.77	6.11	6.14	7.08	7.65	8.70	22	5.90	6.15	6.30	6.50	7.45	6.90
8	5.77	6.11	6.14	6.95	7.85	7.90	23	5.89	6.01	6.30	6.45	7.52	6.80
9	5.77	6.11	6.15	6.89	8.00	7.78	24	5.91	6.16	6.34	6.65	7.60	6.70
10	5.77	6.10	6.08	6.70	7.70	7.90	25	5.91	6.00	6.34	6.65	7.70	6.69
11	5.80	6.10	6.10	6.65	8.30	7.89	26	5.91	6.01	6.34	6.67	8.02	6.60
12	5.80	6.10	6.11	6.50	9.00	7.92	27	5.90	6.07	6.35	6.75	8.01	6.62
13	5.80	6.11	6.13	6.49	8.92	7.70	28	5.97	6.08	6.35	6.97	9.10	6.58
14	5.80	6.10	6.16	6.48	9.00	7.40	29	6.00	6.10	6.50	6.70	9.95	6.50
15	5.80	6.10	6.16	6.47	9.48	7.20	30	6.01	.....	6.49	7.00	9.20	6.50
							31	6.01	.....	6.45	.....	9.70	.....

Rating table for Yosemite Creek at Yosemite, Cal., from July 1, 1904, to Dec. 31, 1905.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Second-ft.*	*Feet.*	*Second-ft.*	*Feet.*	*Second-ft.*	*Feet.*	*Second-ft.*
3.70	2	4.60	50	5.50	150	6.40	280
3.80	3	4.70	59	5.60	163	6.50	296
3.90	5	4.80	69	5.70	177	6.60	312
4.00	8	4.90	79	5.80	191	6.70	328
4.10	14	5.00	90	5.90	205	6.80	344
4.20	20	5.10	101	6.00	220	6.90	360
4.30	27	5.20	113	6.10	235	7.00	377
4.40	34	5.30	125	6.20	250		
4.50	42	5.40	137	6.30	265		

NOTE.—The above table is based on 11 discharge measurements made during 1904–5. It is well defined.

Monthly discharge of Yosemite Creek at Yosemite, Cal., for 1904–5.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1904.				
July 11–31	59	8	32.2	1,341
August	59	3	9.9	609
September 1–24	50	2.5	4.7	224
1905.				
May 23–31	344	220	290	5,177
June	304	90	206	12,260
July	90	5	34.3	2,109
August	5	2	2.8	172
September	2	1.5	1.9	113

NOTE.—No estimate made 1906–1909, on account of shifting channel conditions.

SOUTH FORK OF MERCED RIVER AT WAWONA, CAL.

This station was established December 15, 1910, at the upper footbridge, opposite the United States military camp 1 mile below Wawona, in the SE. ¼ sec. 33, T. 4 S., R. 21 E., in the Sierra National Forest.

Big Creek enters one-fourth mile above and Rush Creek three-fourths of a mile below the station. The ranch of the Wawona Co. at Wawona is irrigated from a tributary of the South Fork.

The original gage, which was a vertical staff fastened to the center pier of the footbridge, was destroyed by high water January 30, 1911. On August 22, 1911, a new gage was installed at an independent datum. It is a vertical staff fastened to an alder tree on the left bank, 250 feet below the former location. Measurements are made from a car and cable near the gage, or by wading.

The channel, which is composed of gravel and small bowlders, is straight for some distance above and below the station. The left bank is high; the right bank is more sloping. There is but one channel at all stages.

This station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of South Fork of Merced River at Wawona, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-ft.*
Sept. 24	J. E. Stewart	(a)	26
Dec. 15	H. J. Tompkins	2.00	38
1911.			
Aug. 22	H. J. Tompkins	2.34	47
Nov. 7	.....do	2.10	29
1912.			
Mar. 9	H. J. Tompkins	2.55	73

a No gage installed.

Daily gage height, in feet, of South Fork of Merced River at Wawona, Cal., for 1910–1912.

Day.	Dec.	Jan.	Aug.	Sept.	Day.	Dec.	Jan.	Aug.	Sept.
1910–11.					1910–11.				
1	.....	1.5	.....	2.20	16	2.0	2.8	.....	2.25
2	.....	1.5	.....	2.22	17	2.1	2.8	.....	2.25
3	.....	1.4	.....	2.25	18	1.7	2.8	.....	2.25
4	.....	1.5	.....	2.25	19	1.7	2.8	.....	2.25
5	.....	1.6	.....	2.25	20	2.1	3.0	.....	2.25
6	.....	1.6	.....	2.25	21	2.1	2.8	.....	2.28
7	.....	1.5	.....	2.25	22	2.1	3.0	2.34	2.50
8	.....	1.5	.....	2.25	23	1.9	3.0	.....	2.42
9	.....	1.7	.....	2.25	24	2.0	4.0	.....	2.40
10	.....	2.0	.....	2.25	25	.....	5.0	.....	2.30
11	.....	2.7	.....	2.25	26	.....	4.0	2.25	2.30
12	.....	3.8	.....	2.25	27	1.8	4.1	2.22	2.28
13	.....	3.6	.....	2.25	28	1.6	4.5	2.25	2.20
14	.....	3.0	.....	2.25	29	1.6	5.6	2.25	2.20
15	2.0	2.8	.....	2.25	30	1.6	.....	2.25	2.20
					31	1.6	.....	2.25	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	2.25	.....	2.5	.....	3.1	3.0	2.8	3.4	6.0
2	2.28	2.2	2.6	2.7	3.2	3.1	2.9	3.4	6.0
3	2.28	2.2	2.6	2.7	3.2	3.0	.....	3.5	6.6
4	2.25	2.2	2.6	2.8	3.2	3.2	3.1	3.4	5.8
5	2.20	2.2	2.7	2.8	3.2	3.6	3.1	3.5	6.0
6	2.20	2.2	2.7	2.7	3.1	3.6	3.2	3.5	5.8
7	2.22	2.1	2.7	2.8	3.1	3.6	3.2	3.6	5.7
8	2.20	2.1	2.8	2.9	3.2	3.7	3.4	3.7	5.0
9	2.20	2.1	2.8	2.9	3.0	2.55	3.4	3.8	4.9
10	2.25	2.2	2.8	2.9	2.9	2.6	3.4	3.9	4.5
11	2.25	2.2	2.7	2.9	2.9	2.6	3.5	3.9	4.8
12	2.25	2.2	2.7	2.8	3.0	2.6	3.3	3.9	4.3
13	2.22	2.2	2.8	2.9	3.0	2.6	3.0	4.1	4.0
14	2.22	2.2	2.8	2.9	3.1	2.6	2.9	4.4	3.9
15	2.20	2.2	2.8	3.1	3.0	2.5	2.8	4.7	3.8
16	2.20	2.2	2.8	3.2	3.0	2.6	2.9	4.8	3.8
17	2.20	2.2	2.8	3.0	3.0	2.6	2.8	4.8	3.8
18	2.20	2.2	2.8	3.1	3.2	2.5	2.9	5.0	3.6
19	2.20	2.2	2.9	3.2	3.2	2.5	2.9	5.2	3.6
20	2.20	2.2	2.9	3.2	3.2	2.7	3.0	5.3	3.6
21	2.21	2.2	2.9	3.1	3.2	2.7	3.0	4.8	3.5
22	2.20	2.2	2.9	3.1	3.2	2.6	3.1	4.2	3.7
23	2.20	2.8	2.9	3.2	3.2	2.6	3.2	3.8	3.7
24	2.20	2.7	2.9	3.1	3.0	2.8	3.2	3.8	3.4
25	2.20	2.9	3.0	3.2	3.2	2.8	3.1	4.6	3.2
26	2.20	2.8	2.9	3.2	3.0	2.9	3.2	4.6	3.0
27	2.20	2.8	2.9	3.1	3.0	2.9	3.2	4.8	3.0
28	2.21	2.8	2.9	3.1	3.1	2.9	3.3	5.9	2.9
29	2.21	2.8	3.0	3.2	3.2	2.9	3.3	6.0	2.9
30	2.21	2.7	3.0	3.2	.....	3.0	3.4	6.0	2.8
31	.....	.....	3.0	3.2	.....	3.0	.....	5.6	.....

BIG CREEK NEAR WAWONA, CAL.

This station, which is located at the highway bridge on the old Madera-Yosemite toll road at Summerdale (an abandoned post office), in sec. 23, T. 5 S., R. 21 E., 4 miles south of Wawona, was established September 25, 1910.

Several miles above the station, water is diverted from Rush Creek, the principal tributary of Big Creek, for use in the flume of the Madera Sugar Pine Co. for floating lumber from Sugar Pine to Madera.

The gage is a vertical staff fastened to the downstream end of the left abutment of the bridge.

At high stages discharge measurements are made from the bridge.

No gage heights were observed during 1910 and no estimates of daily or monthly discharge have been prepared.

This station is maintained in cooperation with the United States Forest Service.

Discharge measurements of Big Creek near Wawona, Cal., in 1910.

Date.	Hydrographer.	Width.	Area of section.	Gage height.	Discharge.
		Feet.	*Sq. ft.*	*Feet.*	*Sec.-ft.*
Sept. 25	Stewart and Roberts	10.5	4.8	0.17	3.9
Nov. 7	H. J. Tompkins	10.0	5.0	.20	4.5

NOTE.—Measurements made by wading.

Daily gage height, in feet, of Big Creek near Wawona, Cal., for 1911.

Day.	Jan.	Feb.	June.	Day.	Jan.	Feb.	June.	Day.	Jan.	Feb.	June.
1911.				1911.				1911.			
1	0.9			11				21	1.3	1.0	
2	1.0	1.1		12	.9			22	1.0		
3	1.1			13		.7		23		1.0	
4				14			1.6	24	1.0		
5	1.1	.3		15			1.7	25			1.0
6				16		1.0	1.8	26	.5		
7				17	1.5			27			
8				18		1.0		28			
9				19	1.5			29			
10	.4	.6		20				30	3.5		
								31	2.6		

TUOLUMNE RIVER AT HETCH HETCHY VALLEY DAM SITE, CAL.

The entire drainage area of Tuolumne River above Lagrange is about 1,500 square miles, 452 square miles of which lies above the Hetch Hetchy dam site, which has an elevation of 3,630 feet above sea level. This upper drainage area consists of high granite mountains culminating in Mount Dana, Mount Gibbs, and Mount Lyell.

A gaging station was established at this point May 30, 1901, by J. B. Lippincott for the city of San Francisco, and the following meter measurements and gage heights are given by the courtesy of Mr. C. E. Grunsky, former city engineer.

Discharge measurements of Tuolumne River at Hetch Hetchy Valley dam site, Cal., in 1901.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1901.	*Feet.*	*Sec.-ft.*	1901.	*Feet.*	*Sec.-ft.*
June 29	36	7,621	Aug. 29	12.93	190
July 4	30	3,296	Sept. 5	12.65	156
12	26.1	2,720	14	12.42	78
21	24.17	1,886	20	12.32	66
29	21.5	1,160	28	13.11	145
Aug. 2	20.35	1,137	Oct. 5	12.92	116
13	15.70	754	11	12.60	88
25	13.28	231			

Daily gage height, in feet, of Tuolumne River at Hetch Hetchy Valley dam site, Cal., for 1901.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Day.	May.	June.	July.	Aug.	Sept.	Oct.
1	.....	22.50	30.00	20.62	12.81	13.04	16	.....	31.00	26.00	15.14	12.40	.....
2	.....	24.55	28.60	20.33	12.77	13.01	17	.....	30.00	24.50	14.92	12.39	.....
3	.....	24.00	25.80	19.87	12.73	12.92	18	.....	30.00	24.00	14.70	12.37	.....
4	.....	24.00	30.00	19.41	12.69	12.95	19	.....	32.00	24.00	14.45	12.35	.....
5	.....	24.00	30.00	18.94	12.65	12.92	20	.....	32.00	24.00	14.26	12.32	.....
6	.....	24.50	28.00	18.48	12.60	12.87	21	.....	32.00	24.20	14.04	12.41	.....
7	.....	24.50	28.00	18.02	12.56	12.81	22	.....	33.00	24.40	13.82	12.52	.....
8	.....	26.00	25.00	17.95	12.52	12.76	23	.....	30.00	24.00	13.60	12.64	.....
9	.....	26.00	25.00	17.49	12.48	12.70	24	.....	30.00	23.00	13.48	12.73	.....
10	.....	27.00	24.10	17.03	12.43	12.65	25	.....	30.00	23.00	13.28	12.82	.....
11	.....	28.00	26.00	16.57	12.43	12.60	26	.....	31.50	22.00	13.19	12.92	.....
12	.....	28.00	26.10	16.11	12.42	12.50	27	.....	30.40	22.00	13.10	13.01	.....
13	.....	29.00	26.60	15.70	12.42	12.56	28	.....	34.80	21.50	13.10	13.11	.....
14	.....	29.00	26.00	15.58	12.42	12.53	29	.....	36.00	21.50	12.93	13.08	.....
15	.....	30.00	24.50	15.36	12.41	12.50	30	32.30	31.70	21.00	12.89	13.06	.....
							31	32.00	.....	21.00	12.85	.....	.....

Monthly discharge of Tuolumne River at Hetch Hetchy Valley dam site, Cal., for 1901.

[Drainage area, 452 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1901.						
June	7,620	1,550	3,476	7.69	8.58	206,836
July	3,650	1,200	2,159	4.78	5.51	132,752
August	1,122	127	427	.945	1.09	26,255
September	147	86	109	.241	.27	6,486

TUOLUMNE RIVER AT LAGRANGE, CAL.

This station was established August 29, 1895, at the wagon bridge at Lagrange, about 2 miles below the Lagrange dam and the headworks of the Turlock and Modesto canals, and half a mile below the power house of the Lagrange Water & Power Co. Since April 1, 1908, except September 25 to December 5, 1908, the station has been maintained at the dam, and flow has been determined by considering the dam as a weir.

Woods Creek unites with the main stream from the north about 20 miles above Lagrange. No other tributaries of importance enter near the station.

Three important diversion systems now take water from Tuolumne River above Lagrange. The Turlock and Modesto canals take water at the Lagrange dam (Pl. VII, *A*) from the left and right banks, respectively, for irrigation in the San Joaquin Valley. The Modesto canal was completed and put in operation April, 1903, and the Turlock canal was first used for irrigation purposes in 1899. The Lagrange Water & Power Co.'s canal takes water from the left bank 13 miles

A. LAGRANGE DAM FROM LEFT BANK OF TUOLUMNE RIVER AT LAGRANGE, CAL.

B. DAM SITE NEAR THE HEADWATERS OF TUOLUMNE RIVER AT TUOLUMNE MEADOWS, CAL.

above Lagrange. The diverted water is used chiefly for power development and all water so used is returned to the river below the dam. The original canal, known as the "Lagrange mining ditch,"[1] usually carried from 10 to 30 second-feet of water, which was returned to the river both above and below the bridge station and above the measuring section in the river. No account was ever taken of this discharge. The old canal was rebuilt and enlarged and put in use as a power canal in 1908. Water rights already acquired on this stream are considerably in excess of the low-water flow. It is practically impossible to determine the minimum flow of the stream very closely because of the diversions. During the late summer and fall the power and irrigation canals take the total flow and no water passes over the dam for several months at a time. Regular stations are maintained on the three canals, but the minimum flow is appreciably affected by water that seeps around and through the dam and from the canals.

The gage at the dam is painted on a rock ledge on the right bank, 80 feet above the dam. The zero of the gage is at the average elevation of the crest of the dam. The gage at the original station is a vertical staff on the pier of the bridge from which occasional discharge measurements are made for checking the rating of the dam. The original datum of this gage is still maintained.

In general, conditions for obtaining accurate discharge data at the Lagrange dam are very good, and, except for minimum flow, full reliance can be placed on the records at this station.

Computed discharges for this station are fair for the earlier years except that the high-stage discharges for 1896 are much too low. For the later years the records of discharge are good.

Discharge measurements of Tuolumne River at Lagrange, Cal., for 1895–1910.

Date.	Hydrographer.	Gage height.	Discharge.
1895.		*Feet.*	*Sec.-ft.*
Aug. 29	J. B. Lippincott	4.40	299
Sept. 14	do	5.80	1,824
Nov. 28	do	4.20	129
1896.			
Apr. 15	J. A. Vogleson	6.95	4,236
May 5	H. S. Crowe	7.00	4,004
June 17	do	9.30	8,274
Sept. 4	do	4.90	671
Oct. 30	J. B. Lippincot	4.45	361
1897.			
Feb. 15	J. B. Lippincot	5.80	1,864
May 29	Lippincott and Cole	9.25	11,594
July 12	A. O. Campbell	5.70	1,839
Sept. 7	Campbell and Fay	4.00	95
Oct. 30	Campbell and Costello	4.73	534
Dec. 20	J. B. Lippincott	4.85	614
1898.		*Feet.*	*Sec.-feet.*
Apr. 18	J. B. Lippincott	7.18	5,762
May 31	do	5.90	1,887
July 30	do	3.95	103
Sept. 9	do	3.00	0
Oct. 7	do	3.70	83
1899.			
Mar. 3	J. B. Lippincott	5.00	774
Apr. 20	Bennett and Montgomery	7.55	5,712
21	S. G. Bennett	7.85	6,943
May 19	Bennett and McGimm	6.72	3,616
June 6	Bennett and Montgomery	8.47	8,964
29	S. G. Bennett	6.15	2,347
Aug. 3	do	3.70	23
Sept. 11	do	3.58	12

[1] Constructed in 1871 by the Lagrange Ditch & Hydraulic Mining Co.

Discharge measurements of Tuolumne River at Lagrange, Cal., for 1895–1910—Contd.

Date.	Hydrographer.	Gage height.	Discharge.
1900.		*Feet.*	*Sec.ft.*
Apr. 5	S. G. Bennett	6.08	2,286
May 20	do	8.40	8,720
June 22	do	7.09	4,629
Aug. 11	do	3.50	17
Sept. 8	do	3.40	10.9
Dec. 27	do	5.32	964
1901.			
Jan. 29	Bennett and Hardera	5.75	1,419
Apr. 7	S. G. Bennett	6.10	2,382
June 12	J. B. Lippincott	7.63	6,470
Aug. 2	do	5.45	1,354
31	do	4.30	248
1902.			
Mar. 6	Bennett and Lawson	6.00	2,351
May 13	do	8.35	9,476
Aug. 27	do	3.50	15
1903.			
Feb. 7	S. G. Bennett	5.50	1,269
Apr. 7	do	6.75	4,135
June 16	do	6.85	4,348
Nov. 27	do	5.05	894
1904.			
Jan. 21	F. W. Huber	4.15	143
Mar. 26	Clapp, Bennett, and Murphy	6.90	4,750
May 9	S. G. Bennett	8.64	10,531
June 8	O. W. Peterson	8.28	9,656
July 21	do	5.73	1,986
Aug. 23	do	3.25	4.6
1905.			
Mar. 15	F. R. S. Buttemer	6.10	2,548
Apr. 6	O. W. Patterson	6.60	3,817
May 24	R. S. Hawley	7.90	7,846
June 16	do	7.90	7,574
17	do	7.45	6,249
Sept. 13	C. H. Lee	3.30	9.2
Oct. 18	Lee and Hawley	3.68	53
1906.		*Feet.*	*Sec.ft.*
Feb. 18	C. H. Lee	5.80	1,870
Mar. 29	R. S. Hawley	7.71	6,220
Apr. 25	do	7.52	5,710
May 15	C. H. Lee	8.80	11,000
25	W. C. Sawyer	8.18	7,760
28	do	10.45	15,900
June 4	do	9.11	11,100
14	do	10.10	14,800
21	do	10.54	17,000
29	do	8.62	9,750
July 3	do	10.79	18,300
11	do	9.00	11,800
21	do	8.22	8,570
31	do	6.80	4,150
Aug. 3	do	6.20	2,700
6	do	5.78	1,890
20	W. F. Martin	5.43	1,380
Nov. 21	do	4.26	197
1907.			
May 1	W. F. Martin	8.40	8,460
28	do	9.10	11,200
31	do	9.85	14,600
Aug. 1	W. A. Lamb	5.80	3,060
16	W. F. Martin	4.29	933
Nov. 15	W. A. Lamb	3.53	228
1908.			
Mar. 3	W. F. Martin	4.35	1,050
May 1	W. A. Lamb	6.15	5,370
1	do	6.20	5,600
June 16	W. F. Martin	4.70	1,910
Sept. 11	W. V. Hardy	[a] 2.70	23
Dec. 9	W. F. Martin	3.47	346
1909.			
June 2	W. F. Martin	[b] 9.00	13,600
Aug. 2	W. V. Hardy	1.50	16
5	W. F. Martin	1.60	29
5	W. V. Hardy	1.61	28
1910.			
Apr. 1	J. E. Stewart	4.48	3,450
May 19	do	5.88	6,400
June 28	do	2.29	335

[a] Estimated.

[b] Gage at dam read 6.12 feet.

Daily gage height, in feet, of Tuolumne River at Lagrange, Cal., for 1895–1912.

Bridge station.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1895.			1895.			1895.		
1		4.4	11		4.0	21		4.4
2		4.4	12		4.9	22		4.2
3		4.3	13		6.2	23		4.0
4		4.3	14		5.8	24		3.9
5		4.3	15		6.6	25		4.0
6		4.3	16		5.5	26		4.4
7		4.2	17		5.3	27		4.3
8		4.2	18		5.0	28		4.2
9		4.2	19		4.8	29		4.2
10		4.2	20		4.7	30	4.5	4.2
						31	4.5	

Daily gage height, in feet, of Tuolumne River at Lagrange, Cal., for 1895–1912—Contd.

Bridge station—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895–96.												
1	4.1	4.1	4.3	4.5	5.8	.....	.....	6.4	9.3	7.4	5.0	5.7
2	4.1	4.1	4.3	4.5	5.8	.....	.....	6.5	9.3	7.2	5.0	5.2
3	4.1	4.1	4.3	4.5	5.6	.....	.....	6.7	9.6	7.1	5.0	5.0
4	4.1	4.1	4.2	4.5	5.5	.....	.....	6.9	9.2	7.2	4.9	4.9
5	4.1	4.1	4.2	4.5	5.5	.....	.....	7.0	9.3	7.7	4.8	4.8
6	4.0	4.1	4.2	4.5	5.4	.....	.....	6.8	9.2	7.7	4.8	4.7
7	3.8	4.1	4.2	4.5	5.4	.....	.....	6.7	9.6	7.5	4.7	5.2
8	(a)	4.1	4.2	4.5	5.3	.....	.....	6.7	9.2	7.3	4.7	5.1
9	.....	4.1	4.2	4.5	5.3	.....	.....	6.7	9.6	7.4	4.6	4.8
10	.....	4.1	4.2	4.5	5.3	.....	.....	6.6	9.2	7.4	4.5	4.7
11	.....	4.1	4.2	4.5	5.3	.....	.....	6.7	9.2	7.4	4.5	4.6
12	.....	4.1	4.2	4.5	5.3	.....	.....	6.8	9.2	7.1	4.5	4.5
13	.....	4.1	4.2	4.5	5.3	.....	.....	6.6	9.4	6.8	4.5	4.5
14	.....	4.1	4.2	4.5	5.3	.....	.....	6.5	9.2	6.5	4.5	4.4
15	.....	4.1	4.3	4.5	5.3	.....	7.0	6.6	9.5	6.3	4.5	4.3
16	.....	.....	4.3	4.9	5.3	.....	6.9	6.4	9.5	6.3	4.5	4.2
17	3.9	4.1	4.2	5.6	5.3	.....	6.6	6.4	9.2	6.4	4.4	4.2
18	3.9	4.1	4.2	8.5	5.3	.....	6.5	6.6	9.2	6.2	4.4	4.2
19	3.9	4.1	4.3	7.2	5.3	.....	6.4	6.3	9.1	6.1	4.4	4.1
20	4.1	4.1	4.5	8.3	5.3	.....	6.3	6.5	9.8	5.9	4.5	4.1
21	4.3	4.1	5.2	8.1	5.3	.....	6.5	6.8	8.5	5.9	4.5	4.3
22	4.4	4.1	4.8	7.3	5.3	.....	6.4	7.0	8.6	5.8	4.5	4.3
23	4.3	4.1	4.7	7.0	5.3	.....	6.3	6.9	8.6	5.7	4.5	4.5
24	4.3	4.1	4.6	6.7	5.3	.....	8.4	7.1	8.1	5.6	4.4	4.5
25	4.3	4.1	4.5	6.1	5.3	.....	9.1	7.8	8.2	5.4	4.4	4.4
26	4.3	4.1	4.5	5.6	5.3	.....	8.5	8.5	8.0	5.7	4.4	4.3
27	4.3	4.1	4.5	8.9	5.3	.....	8.1	8.9	7.9	5.6	4.3	4.3
28	4.2	4.1	4.5	7.6	5.3	.....	7.9	9.2	7.9	5.4	4.3	4.3
29	4.2	4.2	4.5	7.5	5.3	.....	7.2	10.2	8.1	5.3	4.3	4.3
30	4.2	4.1	4.5	7.1	.....	.....	6.7	9.6	7.6	5.2	4.3	4.2
31	4.1	.....	4.5	6.4	.....	.....	.....	9.6	.....	5.1	6.5	.....
1896–97.												
1	4.2	4.5	5.1	5.55	8.95	6.3	6.5	8.7	8.3	6.6	4.7	4.1
2	4.2	4.5	5.2	5.25	8.85	6.4	6.4	8.9	8.0	6.7	4.6	4.1
3	4.1	4.4	5.2	5.15	9.05	6.4	6.3	9.3	7.9	6.8	4.6	4.1
4	4.1	4.3	5.2	5.2	9.8	6.2	6.4	9.5	8.0	6.8	4.5	4.0
5	4.1	4.3	5.2	5.1	8.95	6.1	6.6	9.7	8.0	6.9	4.5	4.0
6	4.1	4.3	5.1	5.1	8.1	6.8	6.9	9.8	8.2	6.7	4.5	4.0
7	4.0	4.3	5.1	5.1	8.3	6.8	7.0	9.9	8.5	6.5	4.5	4.0
8	4.0	4.3	5.0	5.1	7.1	6.3	7.2	9.5	8.2	6.2	3.8	4.0
9	4.0	4.3	5.0	5.1	6.9	6.3	7.3	9.8	8.2	6.0	4.8	3.9
10	4.0	6.4	5.0	5.0	6.35	6.2	7.4	9.7	8.5	6.4	4.5	4.0
11	4.0	5.6	5.0	5.0	6.2	6.2	7.6	9.0	8.0	6.3	4.5	4.0
12	4.0	5.2	5.0	5.0	6.2	6.1	7.9	9.3	7.6	6.1	4.5	4.0
13	4.0	5.0	6.8	5.05	6.2	6.1	8.2	9.2	7.5	6.2	4.3	4.0
14	3.9	4.9	6.1	5.4	5.95	6.0	8.5	9.1	7.3	5.8	4.3	3.9
15	3.9	4.8	5.7	5.1	5.8	6.0	8.9	9.7	7.0	5.6	4.3	3.9
16	3.9	4.7	5.6	5.1	5.7	6.0	9.3	9.0	6.9	5.5	4.3	3.9
17	3.9	4.8	5.4	5.1	7.0	6.0	9.6	8.8	6.4	5.4	4.1	3.8
18	3.9	5.1	5.2	5.0	6.9	6.7	9.8	8.6	6.2	5.4	4.1	3.8
19	3.9	5.2	5.1	4.9	6.7	7.8	9.9	8.9	6.0	5.4	4.2	3.9
20	3.9	5.2	5.1	4.9	6.8	6.5	8.7	9.2	6.3	5.5	4.3	3.4
21	3.9	5.5	5.1	4.9	6.5	6.6	8.6	9.6	6.4	5.4	4.3	3.4
22	3.9	5.3	5.0	4.95	6.3	6.2	8.4	10.0	6.5	5.3	4.2	3.5
23	3.9	5.3	5.0	5.0	6.1	6.1	8.3	10.1	6.4	5.2	4.2	3.6
24	3.9	7.9	5.0	5.0	6.0	6.3	8.1	10.2	6.2	5.0	4.1	3.8
25	3.9	7.0	4.9	5.0	6.0	6.4	7.5	10.3	6.4	5.0	4.1	3.8
26	3.9	6.2	4.9	5.35	6.2	6.7	7.8	9.0	6.5	4.9	4.1	3.8
27	4.2	5.7	5.1	5.45	6.3	6.7	7.9	9.2	6.5	5.0	4.2	3.8
28	4.5	5.5	5.4	6.4	6.3	9.0	8.2	9.1	6.6	4.9	4.1	3.8
29	4.4	5.3	5.5	6.4	.....	8.7	8.3	9.2	6.7	4.8	4.2	3.8
30	4.4	5.1	5.3	6.55	.....	7.4	8.5	9.3	6.7	4.9	4.1	3.8
31	4.4	.....	5.7	6.2	.....	6.6	.....	9.0	.....	4.7	4.1	.....
1897–98.												
1	3.8	4.7	5.3	4.8	4.5	5.8	5.5	6.85	5.9	5.0	3.9	3.9
2	3.8	4.7	5.1	4.8	4.5	5.8	5.5	6.7	5.9	4.8	3.9	3.9
3	3.8	4.8	5.0	4.8	4.5	5.6	5.5	6.6	5.8	4.8	3.9	3.8
4	3.8	4.7	4.9	4.8	4.5	5.5	5.4	6.6	5.8	4.8	4.0	3.6
5	3.9	4.7	4.9	4.8	4.6	5.5	5.45	6.4	5.9	4.7	3.9	3.1

(a) Opening in dam closed; no water at gage.

Daily gage height, in feet, of Tuolumne River at Lagrange, Cal., for 1895–1912—Contd.

Bridge station—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897–98.												
6	3.9	4.6	4.8	4.7	4.8	5.5	5.55	6.4	6.2	4.6	3.9	3.1
7	3.9	4.7	4.8	5.0	4.7	5.5	5.85	6.4	6.4	4.5	3.9	3.1
8	3.8	4.6	6.6	4.8	5.7	5.5	5.75	6.6	6.25	4.5	3.9	3.1
9	3.8	4.6	6.3	4.8	5.2	5.5	5.45	6.9	6.1	4.5	3.9	3.0
10	3.8	4.6	5.9	4.8	5.0	5.8	5.8	7.3	6.0	4.5	3.85	3.0
11	4.7	4.6	5.6	4.7	5.0	5.5	6.1	7.5	6.2	4.5	3.9	3.0
12	4.0	4.6	5.8	4.7	5.0	5.3	6.15	7.4	6.2	4.5	3.9	3.0
13	3.8	4.7	5.7	4.7	5.0	5.3	6.5	7.4	6.2	4.4	3.95	3.0
14	3.9	4.6	5.4	4.7	5.0	5.3	6.7	7.4	6.2	4.5	3.9	3.0
15	3.9	4.6	5.5	4.7	5.1	5.2	6.85	7.4	6.2	4.5	3.9	3.0
16	4.4	4.6	5.3	4.7	5.0	5.1	6.85	7.7	6.3	4.4	3.9	3.0
17	4.8	4.6	5.1	4.7	5.2	5.3	7.05	7.3	6.2	4.4	3.9	3.0
18	4.7	4.5	5.1	4.7	5.2	5.2	7.0	7.2	6.1	4.4	3.9	3.0
19	4.3	4.5	5.0	4.7	5.0	5.0	7.05	7.3	6.0	4.3	3.9	3.0
20	3.8	4.4	5.4	4.6	5.0	5.0	7.1	7.2	5.9	4.2	3.85	3.0
21	3.9	6.4	4.8	4.6	5.0	5.0	6.8	7.2	5.8	4.2	3.9	3.1
22	3.9	6.4	4.8	4.6	5.0	5.0	6.65	7.4	5.6	4.1	3.9	3.1
23	3.9	5.7	4.8	4.6	5.0	5.1	6.4	6.2	5.5	4.2	3.9	3.1
24	5.0	5.1	4.8	4.6	5.0	5.1	8.0	6.2	5.4	4.1	3.8	3.1
25	4.7	5.2	4.8	4.5	6.0	5.2	8.0	6.2	5.3	4.1	3.8	3.3
26	4.5	5.2	4.8	4.5	5.5	5.3	8.0	6.8	5.3	4.0	3.8	3.3
27	4.5	5.0	4.8	4.5	5.5	5.4	7.85	6.7	5.3	4.1	3.8	3.4
28	4.5	5.0	4.8	4.5	6.0	5.3	7.7	6.5	5.3	4.0	3.8	3.5
29	4.5	5.0	4.8	4.5	.....	5.3	7.6	6.5	5.1	4.0	3.8	3.6
30	4.7	5.0	4.8	4.5	.....	5.3	6.95	6.1	5.0	4.0	3.8	3.6
31	4.7	.....	4.8	4.5	.....	5.4	.....	5.9	.....	3.9	3.9	.....
1898–99.												
1	3.65	3.55	4.75	4.1	4.77	5.0	6.6	6.1	7.1	6.2	4.4	3.8
2	3.8	3.5	4.6	4.3	4.75	5.0	6.5	6.0	6.9	6.1	4.3	3.8
3	3.9	3.55	4.25	4.6	4.7	5.0	6.6	6.0	6.8	6.0	4.2	3.7
4	3.8	3.6	4.1	4.3	4.7	4.9	6.4	6.0	7.2	6.0	4.2	3.7
5	3.7	3.55	4.0	4.27	4.65	4.9	6.9	6.3	8.1	5.9	4.1	3.7
6	3.7	3.55	4.0	4.2	4.6	4.9	7.1	6.1	8.5	5.8	4.0	3.7
7	3.7	3.4	3.9	4.22	4.62	5.1	7.4	6.1	8.5	5.7	4.0	3.7
8	3.7	3.25	3.9	4.35	4.62	5.2	7.6	6.4	8.4	5.6	4.5	3.7
9	3.7	3.2	3.8	4.32	4.63	5.3	7.9	6.9	8.7	5.5	4.6	3.7
10	3.7	3.2	3.75	4.32	4.67	5.2	7.8	7.4	8.8	5.4	4.5	3.6
11	3.7	3.2	3.7	5.95	4.75	5.1	7.8	8.1	8.8	5.3	4.5	3.7
12	3.7	3.2	3.65	5.12	4.75	5.0	7.8	8.3	8.7	5.2	4.4	3.7
13	3.7	3.2	3.75	4.72	4.85	4.8	7.9	8.4	8.5	5.2	4.8	3.7
14	3.6	3.3	3.7	4.6	4.95	4.8	8.0	8.3	8.0	5.1	4.1	3.8
15	3.6	3.3	3.65	4.42	5.0	4.9	8.1	7.4	7.9	5.1	3.9	3.8
16	3.6	3.3	3.4	4.35	4.9	6.6	8.2	7.9	8.0	5.0	4.0	3.8
17	3.6	3.35	3.7	4.92	4.9	6.3	7.9	7.0	7.9	5.0	3.9	3.8
18	3.55	3.35	3.75	4.92	5.02	5.7	7.8	7.3	7.8	4.9	3.9	3.8
19	3.5	3.35	3.75	4.92	5.2	5.6	7.5	7.3	7.7	4.9	3.9	3.8
20	3.5	3.35	3.8	4.82	5.4	6.2	7.6	7.7	7.8	4.9	3.9	3.75
21	3.5	3.4	4.55	4.8	5.6	5.9	7.8	7.3	7.4	4.8	3.8	3.7
22	3.5	3.45	5.8	4.8	5.5	5.8	7.8	7.1	6.9	4.8	3.8	3.6
23	3.5	3.5	5.6	4.87	5.4	9.1	7.5	7.4	6.8	4.7	4.1	3.7
24	3.5	3.6	4.5	4.82	5.4	11.4	6.0	7.3	6.8	4.7	4.1	3.7
25	3.45	3.8	4.4	4.72	5.3	12.5	6.6	7.0	6.5	4.7	4.0	3.7
26	3.45	3.85	4.2	4.72	5.2	8.6	6.4	6.4	6.3	4.7	4.0	3.7
27	3.45	3.75	4.2	4.8	5.1	7.7	6.3	6.4	6.4	4.7	3.9	3.65
28	3.4	3.7	4.2	4.85	5.1	7.5	6.3	6.5	6.2	4.6	3.8	3.7
29	3.4	3.7	4.1	4.97	.....	7.1	6.2	6.9	6.1	4.6	3.8	3.7
30	3.45	3.7	4.1	4.92	.....	6.8	6.1	6.9	6.1	4.55	3.9	3.6
31	3.5	.....	4.1	4.8	.....	6.6	.....	6.9	.....	4.5	3.8	.....
1899–1900.												
1	3.7	5.3	5.6	6.3	5.3	5.4	6.5	9.8	8.0	5.6	4.2	3.3
2	3.65	5.0	5.5	6.0	5.2	5.4	6.4	7.0	8.0	5.8	4.2	3.3
3	3.6	4.9	5.4	9.8	5.2	5.3	6.5	7.2	7.9	5.7	4.0	3.3
4	3.6	4.9	5.4	8.1	5.2	6.0	6.4	7.2	7.7	5.4	4.0	3.4
5	3.55	4.9	5.3	7.0	5.2	5.9	6.1	7.4	7.8	5.3	3.9	3.3
6	3.55	4.9	5.2	6.7	5.1	5.8	5.8	6.9	8.0	5.2	3.9	3.2
7	3.55	5.1	5.2	6.4	5.1	5.8	6.0	7.1	8.2	5.1	3.7	3.3
8	3.5	5.6	5.2	6.3	5.1	5.9	5.9	7.4	8.4	5.3	3.6	3.2
9	3.5	6.2	5.2	6.2	5.0	5.9	5.9	7.5	8.0	5.0	3.6	3.4
10	3.5	7.7	5.1	6.0	5.0	6.0	5.9	7.8	7.8	5.0	3.5	3.5

Daily gage height, in feet, of Tuolumne River at Lagrange, Cal., for 1895-1912—Contd.

Bridge station—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899-1900.												
11	3.5	7.1	5.2	5.9	5.0	6.1	5.8	7.7	7.8	5.0	3.5	3.5
12	3.5	7.0	5.5	5.8	5.1	6.2	5.8	7.4	7.4	4.5	3.5	3.4
13	3.5	6.3	6.6	5.8	5.0	6.3	5.7	7.4	7.4	4.8	3.4	3.4
14	4.7	6.0	7.3	5.8	5.1	6.3	5.7	7.4	7.4	4.6	3.5	3.4
15	4.6	6.5	7.9	5.7	5.1	6.4	5.6	7.6	7.3	5.2	4.0	3.4
16	4.6	7.1	8.2	5.7	5.2	6.4	5.8	7.7	6.9	5.0	4.0	3.4
17	4.4	6.8	6.9	5.7	5.1	6.5	5.8	8.5	6.8	5.0	3.9	3.3
18	4.6	6.7	6.8	5.7	5.1	6.4	6.1	8.5	7.0	5.1	3.9	3.3
19	4.7	6.7	6.9	5.7	5.1	6.3	6.4	8.4	7.2	4.8	3.9	3.3
20	4.8	6.5	6.8	5.7	5.3	6.5	7.0	8.6	7.2	4.8	3.8	3.4
21	4.8	6.7	7.0	5.6	5.5	6.4	6.9	8.5	7.3	4.7	3.8	3.4
22	6.1	6.6	6.8	5.6	5.5	6.4	6.6	8.5	7.1	4.6	3.6	3.5
23	5.7	6.5	6.9	5.5	5.4	6.4	6.5	8.3	6.8	4.6	3.6	3.4
24	5.4	6.8	6.8	5.5	5.3	6.3	6.3	8.4	6.8	4.4	3.5	3.3
25	5.2	5.68	6.8	5.5	5.4	6.2	6.2	8.2	6.6	4.5	3.4	3.3
26	5.2	5.6	6.9	5.4	5.3	6.1	6.2	8.4	6.5	4.3	3.4	3.3
27	5.1	5.4	6.7	5.4	5.4	6.1	6.1	8.4	6.4	4.2	3.4	3.5
28	5.0	5.6	6.7	5.4	5.4	6.1	6.0	8.3	6.4	4.2	3.4	4.1
29	5.0	5.7	6.9	5.3	.....	6.0	6.2	8.2	6.2	4.4	3.3	3.9
30	5.5	5.6	6.8	5.3	.....	6.1	6.4	7.8	6.1	4.3	3.3	3.9
31	5.5	.....	6.4	5.3	.....	6.4	.....	8.2	.....	4.4	3.3	.....
1900-1901.												
1	3.9	5.1	5.7	5.0	5.7	7.9	5.9	7.3	9.1	8.8	5.6	4.2
2	3.8	5.1	5.7	4.9	5.6	7.9	5.8	7.0	9.3	8.1	5.5	4.3
3	3.7	5.0	5.7	4.8	5.6	7.7	6.4	7.1	9.5	7.8	5.5	4.3
4	4.9	4.9	5.7	5.1	5.6	7.4	6.2	7.1	9.5	7.4	5.6	4.2
5	6.0	4.8	5.7	7.1	10.0	7.4	6.1	7.4	9.4	7.1	5.8	4.2
6	5.5	4.6	5.6	11.4	7.7	7.4	6.1	7.6	8.9	7.4	5.9	4.1
7	5.2	5.5	5.6	10.9	6.8	7.3	6.1	8.0	9.2	7.4	6.0	4.2
8	5.1	5.6	5.7	7.7	6.7	7.1	6.0	8.4	9.1	7.2	5.5	4.1
9	5.2	5.4	5.7	7.0	6.6	7.0	5.9	8.6	9.1	7.2	5.3	4.1
10	5.3	5.3	5.6	6.6	6.3	6.8	5.8	8.9	8.4	6.8	5.2	4.0
11	5.2	5.3	5.6	6.5	6.1	6.7	5.8	8.9	7.6	6.6	5.2	4.1
12	5.2	5.1	5.5	6.7	6.0	6.7	6.1	9.3	7.6	6.8	5.0	4.1
13	5.2	5.1	5.4	6.5	6.0	6.6	6.2	9.6	7.5	6.9	4.8	4.1
14	5.2	5.0	5.4	6.4	6.1	6.5	6.5	9.8	7.3	6.9	4.5	4.0
15	5.2	4.9	5.4	6.2	6.5	6.5	6.7	9.7	7.5	6.7	4.8	4.0
16	5.2	4.8	5.4	6.1	6.4	6.4	6.8	9.7	8.1	6.7	4.7	4.0
17	5.2	6.1	5.4	6.0	9.5	6.4	6.8	9.6	8.2	6.6	4.6	3.9
18	5.2	6.4	5.6	6.0	9.2	6.4	6.9	9.5	8.7	6.4	4.4	4.0
19	5.2	6.1	5.4	5.9	11.7	6.3	7.2	9.3	8.7	6.3	4.2	3.9
20	7.6	10.2	5.4	5.9	10.5	6.4	7.3	8.3	8.5	6.1	4.7	3.9
21	6.5	9.2	5.4	6.2	9.7	6.4	7.5	7.9	9.2	6.1	4.7	3.9
22	6.0	8.3	5.9	6.3	9.7	6.5	7.5	7.6	9.8	6.1	5.2	3.8
23	5.9	7.1	5.7	6.0	10.9	6.5	7.4	7.5	9.4	6.1	4.9	4.1
24	5.6	6.5	5.6	6.0	10.5	6.4	7.6	7.6	8.5	6.2	4.7	4.4
25	5.5	6.3	5.5	6.1	8.8	6.3	7.9	7.3	7.8	6.1	4.6	4.4
26	5.4	6.1	5.4	6.0	8.1	6.3	7.8	7.1	7.5	6.0	4.6	4.3
27	5.2	6.1	5.3	5.8	7.9	6.3	7.6	7.0	7.2	5.9	4.5	4.2
28	5.3	6.0	5.2	5.8	7.8	6.3	7.5	6.9	8.8	5.8	4.4	4.2
29	5.2	5.9	5.2	5.7	.....	6.1	7.6	7.3	9.3	5.7	4.3	4.3
30	5.2	5.8	5.2	5.7	.....	6.0	7.9	8.1	8.9	5.6	4.2	4.5
31	5.0	.....	5.1	5.7	.....	6.0	.....	8.5	.....	5.6	4.2	.....
1901-2.												
1	4.5	5.1	5.4	4.4	4.4	6.0	5.6	6.8	7.7	6.2	4.4	3.5
2	4.5	4.9	5.3	4.3	4.4	6.7	5.6	6.6	7.2	6.1	4.4	4.0
3	4.3	4.9	5.3	5.0	4.4	6.5	5.5	6.6	7.1	5.9	4.2	4.2
4	4.3	4.8	7.5	5.1	4.4	6.1	5.6	6.5	7.4	5.9	4.1	4.0
5	4.2	4.7	7.0	4.8	4.4	5.9	5.8	6.8	7.7	5.5	4.0	4.0
6	4.2	4.6	6.8	4.6	4.3	5.9	6.6	7.0	7.9	5.5	3.8	4.0
7	4.1	4.6	7.3	4.5	4.4	5.8	9.2	7.4	7.7	5.3	3.9	4.0
8	3.8	4.6	6.8	4.4	4.4	6.3	8.9	8.1	8.0	5.2	3.8	3.9
9	3.7	4.5	6.5	4.5	4.9	7.4	7.6	8.4	8.9	5.3	4.1	3.9
10	3.7	4.8	6.1	4.7	4.8	6.6	7.1	8.4	8.7	5.4	4.0	3.9
11	3.7	5.1	5.2	4.6	4.8	6.1	6.9	8.3	8.4	5.4	3.8	4.0
12	3.6	5.0	5.1	4.5	4.8	6.1	6.8	8.0	8.6	5.3	4.0	4.0
13	3.5	4.9	5.0	4.5	4.8	6.0	6.9	7.7	8.5	5.3	4.1	3.9
14	3.4	4.8	4.9	4.5	4.8	5.9	7.1	7.4	8.0	5.2	4.1	4.0
15	3.4	4.7	4.9	4.5	5.0	5.7	7.2	7.3	7.8	5.1	4.2	4.0

Daily gage height, in feet, of Tuolumne River at Lagrange, Cal., for 1895–1912—Contd.

Bridge station—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901–2.												
16	3.3	4.6	5.0	4.4	5.6	5.7	7.3	7.4	7.7	5.2	4.1	3.9
17	3.3	4.7	4.9	4.4	5.5	5.7	7.4	7.5	7.6	5.1	4.0	4.0
18	3.2	4.6	4.8	4.4	5.4	5.8	7.6	7.5	7.3	4.9	3.9	3.9
19	3.2	4.6	4.6	4.4	5.4	5.7	7.8	7.2	7.4	4.9	3.9	3.9
20	3.2	4.5	4.6	4.3	5.3	5.5	8.5	6.6	7.5	5.0	3.8	4.0
21	3.2	4.4	4.5	4.4	5.2	5.5	8.0	6.2	7.6	5.0	3.7	4.0
22	3.3	4.8	4.5	4.3	5.7	5.5	7.6	6.1	7.5	4.9	3.5	3.9
23	3.2	4.7	4.4	4.2	5.5	5.7	7.2	6.3	7.5	4.8	3.4	3.8
24	3.3	4.7	4.4	4.3	5.8	5.7	6.9	6.8	7.3	4.8	3.4	3.9
25	3.3	4.8	4.4	4.4	6.4	5.5	6.0	7.1	7.1	4.8	3.5	3.8
26	3.3	4.7	4.4	4.5	7.3	5.5	6.0	8.0	7.0	4.8	3.5	3.8
27	3.3	4.8	4.4	4.4	7.7	5.4	5.6	8.5	6.8	4.7	3.5	3.8
28	5.7	4.9	4.3	4.3	7.6	5.5	6.0	8.9	6.4	4.6	3.4	3.8
29	5.4	5.4	4.4	4.4	.....	5.7	6.1	8.6	6.4	4.7	3.3	3.7
30	5.1	5.5	4.3	4.4	.....	5.7	6.5	8.8	6.4	4.7	3.5	3.7
31	5.2	.....	4.2	4.3	.....	5.6	.....	8.9	.....	4.5	3.4	.....
1902–3.												
1	3.6	4.4	4.6	4.8	6.7	5.4	11.1	7.5	9.0	6.7	3.3	3.2
2	3.7	4.4	4.6	4.7	6.2	5.4	10.1	7.8	9.1	6.5	3.4	3.2
3	3.6	4.4	4.5	4.7	6.1	5.5	7.9	7.8	8.8	6.3	3.3	3.2
4	3.6	4.3	4.6	4.7	5.8	5.6	7.5	8.0	8.6	5.9	3.4	3.2
5	3.6	4.3	4.8	4.6	5.7	6.2	7.2	8.2	8.4	5.9	3.3	3.2
6	3.6	4.4	5.2	4.6	5.6	5.8	7.0	8.2	8.4	5.7	3.3	3.2
7	3.6	4.4	5.3	4.6	5.6	5.7	6.7	8.5	8.6	5.6	3.3	3.2
8	3.7	4.3	5.1	4.6	5.7	5.7	6.9	8.4	8.5	5.5	3.4	3.2
9	3.7	4.4	5.1	4.6	5.6	5.8	7.1	8.6	8.5	5.5	3.4	3.2
10	3.7	5.9	5.0	4.5	5.6	5.7	7.3	8.9	8.3	5.2	3.3	3.2
11	3.6	6.2	6.2	4.5	5.7	5.6	7.0	9.0	8.0	5.0	3.3	3.2
12	3.6	5.6	5.8	4.5	5.5	5.7	6.7	9.0	7.9	4.9	3.3	3.2
13	3.6	5.2	5.5	4.4	5.5	5.7	6.6	9.4	7.7	4.8	3.3	3 2
14	3.7	5.1	5.4	4.3	5.4	6.5	6.5	9.2	7.6	4.8	3.3	3.2
15	3.7	4.9	5.3	4.4	5.5	6.3	6.5	9.0	7.5	4.7	3.3	3.2
16	3.7	4.9	5.1	4.3	5.4	6.2	6.3	8.8	7.2	4.6	3.3	3.2
17	3.6	4.7	5.0	4.3	5.4	6.1	6.3	8.7	6.8	4.6	3.3	3.2
18	3.6	4.8	4.9	4.3	5.4	6.0	6.2	7.7	7.0	4.5	3.3	3.2
19	3.6	4.8	4.9	4.4	5.4	6.0	6.1	7.2	7.3	4.4	3.3	3.2
20	3.6	5.0	4.8	4.3	5.5	5.9	6.2	6.9	7.3	4.6	3.3	3.2
21	3.5	4.9	4.7	4.4	5.5	6.0	6.3	6.6	7.5	4.6	3.2	3.2
22	3.5	4.9	4.8	4.4	5.4	5.8	6.6	6.4	7.5	4.7	3.2	3.2
23	3.6	4.8	4.9	4.5	5.5	5.8	7.0	6.3	7.4	4.2	3.2	3.2
24	3.7	4.9	4.9	5.2	5.6	5.8	7.6	6.2	7.3	3.7	3.3	3.2
25	4.8	4.9	4.9	6.0	5.4	6.0	7.8	6.0	7.2	3.6	3.2	3.2
26	4.6	4.8	5.0	7.3	5.3	6.4	7.8	5.8	7.1	3.5	3.2	3.2
27	4.5	4.8	5.0	9.6	5.3	6.3	7.6	6.2	7.2	3.6	3.2	3.1
28	4.6	4.8	4.9	10.4	5.2	7.2	7.6	7.3	7.0	3.8	3.2	3.1
29	4.5	4.9	4.9	7.1	.....	7.6	7.3	7.8	6.9	3.4	3.2	3.1
30	4.6	4.8	4.8	6.7	.....	8.5	7.2	8.6	6.8	3.4	3.2	3.1
31	4.5	.....	4.8	6.7	.....	10.2	.....	9.0	.....	3.3	3.2	.....
1903–4.												
1	3.1	3.7	4.7	4.5	3.5	6.45	7.15	6.7	8.3	7.05	5.0	.....
2	3.1	3.7	4.7	4.5	3.5	6.25	6.95	6.55	8.0	6.85	4.95	.....
3	3.1	3.7	4.7	4.45	3.5	6.2	6.8	6.55	9.2	6.65	4.85	3.5
4	3.4	3.7	4.6	4.4	3.5	6.2	6.65	6.9	8.8	6.6	4.7	3.0
5	3.5	3.7	4.6	4.35	4.6	6.25	6.6	7.3	8.6	6.55	4.5	3.0
6	3.8	3.7	4.5	4.3	4.1	6.15	6.85	8.1	8.95	6.65	4.4	3.1
7	3.7	3.7	4.4	4.3	4.5	6.3	7.2	8.7	8.7	6.8	4.7	3.1
8	3.8	3.85	4.4	4.25	4.45	6.6	7.35	8.7	8.2	6.6	4.55	3.1
9	3.7	3.85	4.4	4.3	4.3	6.6	7.35	8.8	8.3	6.15	4.3	3.1
10	3.7	3.9	4.3	4.25	4.2	7.15	7.6	9.0	8.45	6.1	4.2	3.1
11	3.7	3.9	4.2	4.3	4.1	7.4	7.85	9.05	8.5	6.0	3.8	3.1
12	3.7	3.85	4.2	4.35	5.3	6.8	8.1	9.5	8.55	6.0	3.5	3.1
13	3.7	6.2	4.1	4.3	6.9	6.55	8.35	9.5	8.7	5.85	3.25	3.1
14	3.7	6.15	4.1	4.2	5.7	6.35	8.35	9.65	8.5	5.75	3.25	3.1
15	3.7	6.3	4.0	4.2	5.35	6.45	7.7	9.45	8.5	5.55	3.2	3.1
16	3.6	5.8	4.0	4.2	9.35	6.4	7.5	9.45	8.5	5.45	4.0	3.1
17	3.6	5.4	4.0	4.2	7.15	6.5	7.4	9.55	8.3	5.45	4.7	3.1
18	3.6	5.0	4.1	4.4	6.35	7.5	7.3	8.45	8.2	5.5	4.5	3.1
19	3.7	4.9	4.2	4.4	5.9	7.7	8.45	8.35	8.1	5.7	4.0	3.1
20	3.7	5.5	4.3	4.3	5.6	10.3	7.45	8.35	8.05	5.85	3.7	3.1

Daily gage height, in feet, of Tuolumne River at Lagrange, Cal., for 1895–1912—Contd.

Bridge station—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903–4.												
21	3.7	6.5	4.2	4.05	5.65	8.4	7.1	8.55	8.0	5.8	3.25	3.1
22	3.7	6.2	4.2	4.1	6.25	7.75	7.0	9.5	8.0	5.8	3.2	3.1
23	3.6	5.9	4.2	4.05	8.45	8.1	6.7	10.25	7.9	5.9	3.2	3.25
24	3.7	5.7	4.3	4.2	8.5	7.6	6.55	10.15	7.9	5.9	3.2	5.05
25	3.7	5.4	4.3	4.2	9.8	7.2	6.65	9.85	7.65	5.6	3.2	5.45
26	3.7	5.2	4.4	3.9	7.8	6.95	6.9	8.7	7.35	5.3	3.2	5.85
27	3.7	5.0	4.32	3.8	8.7	6.85	6.8	8.3	7.25	5.15	3.2	5.55
28	3.7	4.9	4.4	3.65	7.6	7.3	6.6	8.3	7.25	5.0	3.1	5.5
29	3.7	4.8	4.38	3.5	6.9	9.1	6.6	8.6	7.35	4.95	4.0	5.5
30	3.7	4.8	4.36	3.5	.....	8.05	6.55	8.7	7.25	4.8	.....	6.1
31	3.7	.....	4.35	3.5	.....	7.45	.....	8.35	.....	5.0	.....	.....
1904–5.												
1	6.2	5.5	4.7	5.7	5.75	5.7	5.9	7.3	7.0	6.05	3.2	3.1
2	6.5	5.45	4.7	5.1	8.1	5.85	6.05	6.7	7.0	6.0	3.2	3.1
3	6.1	5.4	4.7	5.0	6.3	5.9	5.9	6.3	6.9	5.8	3.2	3.1
4	6.0	5.35	4.7	4.8	6.0	5.9	5.9	6.35	6.85	5.45	3.2	3.1
5	5.85	5.3	4.7	4.8	6.35	5.9	5.95	6.15	6.75	5.5	3.2	3.1
6	5.9	5.3	4.65	4.8	6.1	5.9	6.3	6.15	6.7	5.5	3.2	3.1
7	7.35	5.2	4.6	4.75	5.6	5.9	6.65	6.35	6.85	5.35	3.2	3.1
8	7.45	5.15	4.6	4.75	5.5	5.9	6.6	6.5	7.1	5.4	3.2	3.1
9	7.25	5.1	4.6	4.75	5.4	5.85	6.45	6.2	7.6	5.15	3.2	3.1
10	7.1	5.1	4.55	4.75	5.4	5.8	6.5	6.1	7.9	5.0	3.2	3.1
11	9.8	5.05	4.55	4.8	5.2	5.85	6.4	6.0	8.0	4.85	3.2	3.1
12	8.2	5.0	4.5	4.8	5.1	5.8	6.05	6.0	8.05	4.7	3.2	3.4
13	6.85	5.0	4.5	4.8	5.1	6.95	5.8	5.9	8.0	4.55	3.2	3.3
14	6.5	5.0	4.5	4.8	5.0	6.55	5.75	6.1	7.85	4.5	3.2	3.3
15	6.5	4.9	4.5	4.8	5.0	6.1	5.9	6.8	7.85	4.75	3.2	3.2
16	5.9	4.9	4.5	4.8	4.9	6.1	5.95	7.7	7.8	4.7	3.2	3.2
17	5.6	4.85	4.5	4.8	5.1	7.3	5.9	8.7	7.6	3.65	3.2	3.2
18	5.5	4.8	4.45	4.8	5.1	7.0	5.95	8.25	7.45	3.4	3.1	3.2
19	5.5	4.8	4.45	4.8	5.1	9.3	5.9	8.0	7.3	3.3	3.1	3.2
20	5.5	4.8	4.4	4.85	5.85	7.6	5.9	8.0	7.25	3.2	3.1	3.2
21	5.5	4.75	4.4	5.0	5.65	6.85	5.9	8.25	7.35	3.2	3.1	3.2
22	5.5	4.75	4.35	5.1	5.4	6.6	5.95	7.9	6.9	3.2	3.1	3.2
23	5.5	4.7	4.35	5.15	5.4	6.5	6.6	7.6	6.25	3.2	3.1	3.2
24	5.5	4.7	4.35	5.2	5.4	6.3	7.1	7.8	6.15	3.2	3.1	3.2
25	5.5	4.7	4.4	5.1	5.55	6.1	7.1	8.0	6.15	3.2	3.1	3.2
26	5.5	4.7	4.5	5.0	5.8	6.1	7.2	7.85	6.1	3.2	3.1	3.2
27	5.5	4.7	4.5	4.85	5.7	6.2	7.2	7.65	6.05	3.2	3.1	3.3
28	5.5	4.7	4.5	4.8	5.8	6.1	7.35	7.35	6.05	3.2	3.1	3.25
29	5.5	4.7	4.5	4.8	.....	6.45	7.4	6.7	6.20	3.2	3.1	3.4
30	5.5	4.7	4.5	4.9	.....	6.25	7.7	6.85	6.05	3.2	3.1	3.5
31	5.5	.....	6.2	4.9	.....	6.1	.....	6.9	.....	3.2	3.1	.....
1905–6.												
1	3.7	3.65	4.05	4.2	4.85	6.0	8.15	7.1	8.3	9.8	6.4	3.45
2	3.85	3.65	4.05	4.1	4.9	5.9	8.1	7.3	8.25	10.4	6.25	3.45
3	3.8	3.65	4.0	4.0	4.8	6.1	7.85	7.5	8.55	10.65	6.3	3.45
4	3.7	3.65	4.0	4.0	4.8	6.3	7.3	7.75	9.1	10.6	6.1	3.45
5	3.6	3.65	4.0	4.0	4.8	6.2	7.05	8.4	9.35	10.3	5.95	3.45
6	3.6	3.65	4.0	3.7	4.8	6.2	7.05	9.7	8.55	10.25	5.9	3.45
7	3.6	3.65	4.0	3.75	4.75	6.1	7.05	9.45	8.1	10.05	5.9	3.45
8	3.6	3.65	4.0	3.7	4.8	6.1	7.1	9.25	8.25	10.1	5.9	3.45
9	3.5	3.65	4.0	3.3	4.85	6.3	7.15	9.6	8.9	9.85	5.95	3.4
10	3.5	3.65	4.0	3.3	4.95	6.4	7.45	9.8	9.5	9.1	5.75	3.0
11	3.5	3.65	3.9	3.3	5.5	6.55	7.6	10.15	10.2	9.2	5.9	3.0
12	3.5	3.65	3.9	3.4	5.0	9.7	7.45	9.25	10.9	9.3	5.9	3.0
13	3.5	3.65	4.0	6.45	4.85	7.9	7.3	8.8	11.0	9.65	5.75	3.0
14	3.5	3.7	3.95	8.2	5.1	7.5	7.1	8.75	9.9	9.5	5.7	3.0
15	3.5	3.7	3.95	6.75	6.35	11.4	7.35	8.8	9.6	9.1	5.5	3.0
16	3.5	3.7	3.95	6.6	6.0	9.1	7.45	8.4	10.65	8.8	5.4	3.0
17	3.5	3.7	4.0	6.9	5.55	6.75	7.55	8.3	10.8	8.7	5.35	3.0
18	3.6	3.7	4.0	10.55	5.6	6.65	7.6	8.75	9.6	8.35	5.3	3.0
19	3.65	3.7	4.0	11.65	5.7	6.65	7.75	9.4	10.2	8.3	5.3	3.0
20	3.65	3.75	4.05	7.3	6.45	6.85	7.8	9.45	10.45	8.1	5.4	3.0
21	3.7	3.8	4.15	6.7	7.2	6.75	8.0	9.0	10.5	8.3	5.4	3.0
22	3.7	3.75	4.1	6.3	6.85	6.35	8.0	8.7	10.45	8.05	5.7	3.0
23	3.7	3.75	4.05	5.9	6.4	7.8	9.0	8.25	10.3	8.2	5.6	3.05
24	3.7	3.75	4.05	5.5	6.25	12.45	8.45	8.0	10.15	8.2	5.35	3.05
25	3.7	3.8	4.05	5.35	6.3	11.3	7.6	8.0	10.4	8.5	5.2	3.05

Daily gage height, in feet, of Tuolumne River at Lagrange, Cal., for 1895–1912—Contd.

Bridge station—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905–6.												
26	3.7	3.8	4.0	5.4	6.25	10.55	7.3	9.6	9.9	8.0	3.6	3.05
27	3.7	3.85	4.0	5.25	6.0	7.9	7.35	9.5	9.0	7.9	3.5	3.05
28	3.7	4.0	4.1	5.2	6.55	7.9	7.55	10.4	8.35	7.6	3.45	3.05
29	3.65	4.0	4.15	5.0	.....	7.05	7.4	9.1	8.6	7.2	3.45	3.05
30	3.55	4.05	4.15	4.95	.....	8.4	7.15	8.4	9.2	6.8	3.45	3.05
31	3.65	.....	4.2	4.9	.....	10.2	.....	8.2	.....	6.6	3.45	.....
1906–7.												
1	3.45	4.1	4.2	5.9	6.25	6.0	8.4	8.5	10.0	8.9	6.05	2.75
2	3.45	4.1	4.2	5.55	8.7	6.0	8.4	8.45	10.4	8.6	5.95	2.8
3	3.45	4.1	4.2	5.5	8.1	5.9	8.4	8.5	10.35	8.9	5.9	2.8
4	3.45	4.1	4.3	5.4	8.2	6.15	8.4	8.35	10.3	9.25	5.6	2.8
5	3.45	4.8	4.35	6.0	7.95	7.4	8.4	8.05	9.95	9.3	5.25	2.8
6	3.45	4.6	4.4	5.6	7.35	7.05	8.4	7.85	9.6	8.55	5.25	2.8
7	3.45	4.55	4.4	5.5	7.0	6.85	8.4	7.9	9.05	8.4	5.25	2.8
8	3.45	4.35	4.3	6.6	6.8	6.45	8.4	7.8	8.5	8.3	5.2	2.8
9	3.8	4.4	3.9	6.05	6.6	6.5	8.4	8.1	8.5	8.25	5.1	2.8
10	3.85	4.4	4.65	6.0	6.5	9.4	8.4	8.4	8.6	8.1	5.0	2.8
11	3.85	4.35	7.8	5.7	6.5	8.0	8.4	8.5	9.1	8.0	4.85	2.8
12	3.9	4.35	7.2	5.5	6.3	7.45	8.4	8.4	8.9	8.0	4.7	2.8
13	3.9	4.35	5.5	6.2	6.1	7.0	8.5	7.9	8.1	7.95	4.6	2.8
14	3.9	4.6	5.05	6.0	6.05	6.75	8.5	7.8	7.7	7.7	4.5	2.8
15	3.9	4.8	4.9	6.0	6.05	6.55	8.5	8.0	7.35	7.5	4.4	2.8
16	4.0	4.3	4.8	5.7	6.1	6.55	8.5	8.4	7.2	7.3	4.3	2.8
17	3.9	4.35	4.8	5.8	6.25	11.2	8.5	8.7	7.15	7.2	4.2	2.8
18	3.9	4.35	4.75	5.7	6.15	13.5	8.5	9.05	7.15	7.2	4.2	2.6
19	3.9	4.35	4.75	5.5	5.95	15.75	8.5	9.3	7.75	7.2	4.2	2.6
20	3.9	4.35	4.75	5.4	5.9	13.0	8.6	9.3	8.2	7.2	3.85	2.6
21	4.2	4.3	4.75	5.4	5.85	11.5	8.6	8.95	8.45	7.0	3.6	2.6
22	4.2	4.2	4.75	5.6	7.7	10.5	8.6	8.75	8.7	6.75	3.45	2.6
23	3.8	4.25	4.8	5.5	6.9	9.8	8.6	8.25	8.2	6.6	3.35	2.55
24	4.1	4.3	4.9	5.55	6.55	10.65	8.6	8.05	7.9	6.7	3.2	2.5
25	4.15	4.2	5.35	5.8	6.5	10.65	8.6	8.4	7.9	6.8	3.05	2.5
26	4.1	4.2	7.4	6.0	6.5	9.3	8.6	8.7	8.2	6.9	2.75	2.5
27	4.1	4.15	7.3	5.9	6.25	8.5	8.5	8.8	8.4	6.75	2.7	2.5
28	4.1	4.15	6.8	9.6	6.1	8.25	8.5	8.9	8.8	6.7	2.7	2.5
29	4.1	3.3	6.1	6.85	.....	7.95	8.5	9.2	8.7	6.35	2.7	2.5
30	4.1	4.15	5.7	6.9	.....	8.15	8.5	9.35	9.05	6.0	2.85	2.5
31	4.1	.....	6.45	6.35	.....	8.4	.....	9.5	.....	5.9	2.8	.....

NOTE.—Gage out below 10 feet during April, 1907; gage heights obtained by measuring down to water surface from 10-foot mark. Gage heights estimated Aug. 9–16, 1907.

Daily gage height, in feet, of Tuolumne River at Lagrange, Cal., for 1895–1912—Contd.

Stations at bridge and at dam.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1	2.5	3.9	3.5	4.4	3.9	4.3	0.55	3.3	1.75	0.6	.....	.....
2	2.5	3.85	3.5	4.3	3.9	4.3	.35	3.2	1.7	.75	.....	.....
3	2.65	3.8	3.5	4.2	4.0	4.3	.18	2.65	1.55	.5	.....	.....
4	2.7	3.8	3.55	4.2	4.25	4.15	.35	2.2	1.2	.5	.....	.....
5	2.6	3.7	3.5	4.15	3.85	4.1	.62	2.0	1.15	.5	.....	.....
6	2.6	3.7	3.5	4.0	3.8	4.1	.9	2.25	1.4	.45	.....	.....
7	2.6	3.7	4.3	4.0	3.85	4.1	1.35	2.8	1.7	.4	.....	.....
8	3.1	3.7	4.2	4.0	3.8	4.0	1.22	2.25	2.1	.25	.....	.....
9	3.7	3.7	4.0	4.0	4.1	4.0	1.18	1.7	2.3	.1	.....	.....
10	3.6	3.65	3.9	4.05	4.25	4.05	1.32	1.4	2.35	.0	.....	.....
11	3.6	3.8	4.65	3.95	4.2	4.1	1.5	1.35	2.3	.0	.....	.....
12	3.3	3.7	4.2	3.95	4.0	4.3	2.0	1.75	2.2	.....	.....	.....
13	3.6	3.6	4.0	3.95	3.9	4.4	2.4	1.65	2.2	.....	.....	.....
14	3.65	3.55	4.05	4.7	3.8	4.55	2.6	1.7	2.25	.....	.....	.....
15	3.6	3.5	4.0	4.6	3.7	4.8	2.45	1.8	2.0	.....	.....	.....
16	3.5	3.5	3.95	4.35	3.7	5.0	2.05	1.7	1.9	.....	.....	.....
17	3.4	3.6	4.0	4.3	3.7	5.1	1.75	1.3	1.8	.....	.....	.....
18	3.45	3.6	3.95	4.15	3.75	4.95	1.7	1.28	1.5	.....	.....	.....
19	3.1	3.7	3.85	4.05	3.8	4.8	2.4	1.7	1.32	.....	.....	.....
20	3.5	3.65	3.8	4.0	3.75	4.9	2.9	1.85	1.15	.....	.....	.....
21	3.5	3.5	3.85	4.0	3.7	4.95	2.9	1.5	.92	.....	.....	.....
22	3.6	3.5	3.8	4.05	3.7	4.5	2.5	1.7	.8	.....	.....	.....
23	3.6	3.5	3.8	4.05	3.6	4.6	2.3	1.55	.7	.....	.....	.....
24	3.6	3.5	3.85	4.6	3.6	4.65	1.8	2.4	.98	.....	.....	.....
25	3.6	3.5	3.8	5.1	3.6	4.5	1.65	3.0	1.05	.....	.....	2.85
26	3.6	3.5	3.85	4.75	3.65	4.3	1.6	2.9	1.0	.....	.....	3.1
27	3.85	3.5	4.0	4.3	3.95	4.2	2.05	2.5	.88	.....	.....	2.7
28	4.0	3.5	4.6	4.25	4.05	4.05	2.75	2.4	.75	.....	.....	3.1
29	3.95	3.5	4.3	4.2	4.65	4.0	3.0	2.7	.65	.....	.....	3.1
30	3.9	3.5	4.3	4.1	.....	4.0	3.2	2.7	.6	.....	.....	.....
31	3.9	.....	4.4	4.0	.....	4.0	.....	2.2	.....	.....	.....	.....
1908-9.												
1	3.0	2.6	3.4	0.1	1.8	1.8	1.9	4.25	5.7	3.7	.....	.....
2	3.0	2.95	3.4	.2	1.6	1.85	2.0	4.4	6.35	3.75	.....	.....
3	2.9	3.1	3.4	.4	3.3	2.05	2.15	4.5	6.4	4.0	.....	.....
4	2.7	.....	3.45	.5	2.4	2.1	2.5	4.6	6.6	3.85	.....	.....
5	2.7	3.5	3.65	.1	2.5	2.25	2.1	4.9	6.6	3.1	.....	.....
6	2.75	.....	.75	2.6	2.4	2.2	1.95	4.8	5.9	2.3	.....	.....
7	2.75	.....	.65	1.9	3.2	2.3	1.95	4.8	5.1	1.8	.....	.....
8	2.75	.....	.....	1.4	3.4	2.2	2.1	4.9	4.8	1.75	.....	.....
9	2.75	3.2	.....	2.8	2.25	2.0	2.4	4.7	4.5	1.8	.....	.....
10	2.8	3.2	.60	1.8	2.1	1.9	2.65	4.6	4.45	1.75	.....	.....
11	2.8	3.2	.60	1.25	4.1	1.8	2.4	3.9	4.55	1.8	.....	.....
12	2.7	3.2	.55	1.0	8.3	1.7	2.3	3.45	4.8	2.0	.....	.....
13	2.7	3.1	.50	6.3	5.2	1.7	2.6	3.1	5.0	2.1	.....	.....
14	2.7	.....	.50	9.5	3.6	1.9	3.0	3.3	4.6	2.0	.....	.....
15	2.85	3.05	.55	7.7	3.1	1.95	3.45	3.5	4.8	1.75	.....	.....
16	4.5	3.1	.45	5.4	3.0	2.15	3.9	3.45	4.5	1.6	.....	.....
17	3.9	3.2	.50	43.4	3.0	2.0	4.0	3.4	4.25	1.4	.....	.....
18	3.7	3.2	.45	2.9	2.95	2.0	4.1	3.5	3.65	1.15	.....	.....
19	3.55	3.2	.40	2.8	2.7	2.0	4.05	3.7	3.55	.85	.....	.....
20	3.45	3.3	.45	.8	2.5	1.9	3.4	4.2	3.1	.65	.....	.....
21	3.45	.....	.45	8.95	2.75	2.05	3.0	4.5	3.6	.45	.....	.....
22	3.4	3.6	.45	5.9	2.4	2.0	2.8	3.9	4.25	.45	.....	.....
23	3.35	3.5	.45	4.0	2.2	2.0	2.7	3.05	4.8	.7	.....	.....
24	3.35	3.5	.45	3.2	2.1	1.9	2.9	2.6	5.0	.6	.....	.....
25	3.35	3.5	.40	4.55	2.0	1.85	3.1	2.7	5.0	.45	.....	.....
26	3.35	.....	.30	3.55	1.9	1.8	3.45	3.7	4.5	.3	.....	.....
27	3.4	3.35	.30	3.45	1.8	1.65	4.0	4.15	4.1	.2	.....	.....
28	3.4	3.3	.30	2.7	1.8	1.6	3.9	4.3	4.15	.....	.....	.....
29	3.35	.3.3	.10	2.3	.....	2.1	3.6	3.4	4.15	.....	.....	.....
30	3.3	3.3	.0	2.0	.....	1.75	3.85	3.1	4.0	.....	.....	.....
31	.....	.....	.0	2.05	.....	1.8	.....	4.75	.....	.....	.....	.....

NOTE.—Apr. 1 to July 11, 1908, gage heights refer to gage at Lagrange dam. July 12 to Sept. 24, 1908, the entire flow was diverted into the canals. Sept. 25–30, 1908, gage heights refer to gage at bridge. Oct. 1 to Dec. 5, 1908, gage heights refer to gage at bridge. After Dec. 6, 1908, gage heights refer to gage at Lagrange dam.

Daily gage height, in feet, of Tuolumne River at Lagrange, Cal., for 1895–1912—Contd.

Station at dam.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
1	.....	0.5	2.05	6.0	2.0	1.7	2.55	2.65	4.55	0.05	.....	.....
2	0.06	.5	5.85	3.4	1.7	1.9	2.55	2.3	4.3	.....	.....	.....
3	.....	.92	3.15	2.6	1.8	2.0	2.5	2.8	3.6	.....	.....	.....
4	.....	.92	2.4	2.4	1.6	2.35	2.5	2.7	3.15	.....	.....	.....
5	.....	.....	2.15	.....	1.5	2.3	2.35	2.05	2.6	.....	.....	.....
6	.....	.....	2.0	2.9	1.5	2.75	2.7	2.15	2.7	.....	.....	.....
7	.....	.7	2.3	1.9	1.5	2.25	2.6	2.9	2.45	.....	.....	.....
8	.....	.85	2.15	1.8	1.5	2.1	2.9	3.7	2.25	.....	.....	.....
9	.....	.85	8.1	1.7	1.4	2.3	3.1	4.35	2.2	.....	.....	.....
10	.....	1.35	3.6	1.7	1.15	2.2	3.4	4.4	2.25	.....	.....	.....
11	.....	1.35	2.65	1.6	1.2	2.2	3.35	4.45	2.4	.....	.....	.....
12	.....	1.3	.....	.....	1.4	2.2	2.8	3.9	2.45	.....	.....	.....
13	.....	1.2	2.15	1.45	1.5	2.25	2.75	4.3	2.15	.....	.....	.....
14	.....	1.2	2.05	1.9	1.5	2.3	2.95	4.3	2.05	.....	.....	.....
15	.....	.....	1.9	1.8	1.4	2.0	3.1	4.3	1.85	.....	.....	.....
16	.....	.....	1.8	2.8	1.15	1.8	3.45	4.35	1.65	.....	.....	1.30
17	.....	.....	1.75	2.3	1.05	1.7	3.8	3.7	1.7	.....	.....	.8
18	.....	1.2	1.65	2.0	1.0	2.3	4.1	3.65	1.65	.....	.....	.25
19	.....	1.2	1.45	1.8	1.3	3.8	4.3	3.7	1.5	.....	.....	.....
20	.....	1.55	1.55	1.6	1.35	2.6	4.5	3.8	1.4	.....	.....	.....
21	.....	7.0	1.55	1.6	1.1	2.55	3.95	3.8	1.3	.....	.....	.....
22	.....	3.9	1.45	1.7	1.25	2.55	4.05	4.3	1.15	.....	.....	.....
23	.4	2.85	1.4	2.2	1.2	2.1	4.2	4.5	1.0	.....	.....	.....
24	.25	3.25	1.4	3.0	1.15	2.05	4.45	4.5	.8	.....	.....	.....
25	.25	3.4	1.4	2.0	1.1	2.0	4.5	4.3	.6	.....	.....	.....
26	.25	3.15	1.4	2.4	1.3	2.0	4.7	4.0	.7	.....	.....	.....
27	.3	2.4	1.2	2.4	1.25	2.05	4.7	4.15	.7	.....	.....	.....
28	.3	2.05	1.2	2.1	1.6	2.15	4.95	4.2	.65	.....	.....	.....
29	.4	2.0	2.0	2.0	.....	2.35	3.95	4.2	.45	.....	.....	.....
30	.7	2.0	3.0	2.0	.....	2.6	3.15	4.35	.2	.....	.....	.....
31	.5	.....	5.25	1.9	.....	2.35	.....	4.6	.....	.....	.....	.....
1910–11.												
1	.....	.3	.5	.45	7.00	2.25	3.95	3.22	3.55	4.00	0.80	.....
2	.....	.3	.6	.....	4.80	2.55	4.08	3.22	3.70	4.20	.62	.....
3	.....	.....	.5	.....	3.70	3.20	4.28	3.30	4.55	4.45	.45	.....
4	.....	.3	.....	.....	3.80	5.08	3.65	3.68	5.48	4.78	.40	.....
5	.....	.....	.85	.40	3.30	4.84	4.72	4.65	5.85	4.55	.25	.....
6	.....	.3	.....	.....	2.90	4.16	4.90	3.90	6.10	4.62	.08	.....
7	.....	.....	.....	.....	2.60	7.35	3.82	3.48	5.70	4.65	.00	.....
8	0.8	.....	.95	.40	2.45	7.55	3.45	3.35	5.58	4.40	.....	.....
9	.....	.3	.....	.40	2.35	5.92	3.88	3.55	5.28	3.92	.....	.....
10	.....	.....	.....	1.85	.....	6.05	3.65	3.40	5.68	3.80	.....	.....
11	.....	.....	1.4	1.10	2.50	4.30	3.05	3.58	6.40	3.80	.....	.....
12	.....	.3	1.4	1.79	2.20	3.52	2.80	3.92	6.70	3.85	.....	.....
13	.6	.....	.....	4.05	2.65	3.00	2.52	3.72	6.92	3.88	.....	.....
14	.45	.....	1.0	3.52	2.50	2.82	2.48	3.70	6.55	4.25	.....	.....
15	.35	.....	.75	2.65	2.30	2.76	2.35	3.25	6.38	4.12	.....	.....
16	.25	.....	.....	1.85	2.15	2.25	2.48	2.82	6.70	4.28	.....	.....
17	.....	.....	.....	1.50	2.00	2.40	2.58	2.60	6.75	4.35	.....	.....
18	.6	.....	.6	1.40	1.95	2.80	2.88	2.54	6.68	4.15	.....	.....
19	.....	.....	.6	1.35	1.95	2.80	3.28	3.18	6.70	3.55	.....	.....
20	.5	.55	.6	1.44	1.95	2.80	3.32	3.75	6.58	3.10	.....	.....
21	.5	.55	.....	3.02	1.85	2.80	3.22	4.30	6.45	3.48	.....	.....
22	.....	.....	.....	2.11	1.80	2.75	3.38	4.92	5.75	2.00	.....	.....
23	.....	.....	.....	1.98	1.68	2.98	3.72	5.58	5.15	1.92	.....	.....
24	.4	.7	.....	5.16	1.58	2.90	4.02	5.62	4.20	2.15	.....	.....
25	.....	.....	.5	5.66	1.52	3.02	4.30	4.65	3.70	1.92	.....	.....
26	.35	.....	.....	3.37	1.45	3.02	4.42	3.72	4.25	1.65	.....	.....
27	.....	.65	.4	2.50	1.50	3.02	4.08	3.85	5.15	1.45	.....	.....
28	.3	.....	.....	2.10	1.42	3.15	3.40	4.15	5.62	1.32	.....	.....
29	.....	.....	.....	4.51	.....	3.28	3.02	4.15	5.08	1.20	.....	.....
30	.3	.....	.....	14.98	.....	3.52	2.95	3.95	4.00	.....	.....	.....
31	.....	.....	.....	13.90	.....	3.75	.....	3.55	.....	.95	.....	.....

NOTE.—Gage heights published for Jan. 12–14, 16–19, 20–26, 29, Feb. 1, Mar. 3–6, 8, 9 and Apr. 6, 1911, determined by means of a hydrograph.

Daily gage height, in feet, of Tuolumne River at Lagrange, Cal., for 1895–1912—Contd.

Station at dam—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1			0.45	0.35	0.65			1.1	4.4
2			.45	.35	.70			1.0	5.0
3			.45	.35	.65		0.22	.72	5.3
4				.35	.65		.50	.62	5.4
5			.35	.35	.65		.48	.82	5.6
6			.35	.40	.65	0.50		.96	4.9
7			.40	.40	.65	.75	.75	1.4	4.8
8			.35	.40	.60		1.4	1.5	4.4
9			.35	.45	.55		1.45	1.65	3.4
10			.40	.45			1.6	2.7	3.1
11	0.50		.35	.85			1.6	2.5	3.0
12			.35	.70			1.2	2.6	3.2
13			.35	.65			.66	3.1	3.2
14		0.40	.35	.50			.31	2.9	
15			.30	.50			.28	3.4	2.4
16			.35	.50			1.0	3.8	2.2
17			.35	.65			.90	3.7	2.0
18			.35	.70			.90	4.0	2.2
19			.40	.50			.28	4.1	2.2
20			.35	.60				3.2	2.3
21		.30	.30	.55				2.7	2.0
22		.30	.35	.55				1.9	1.4
23		.45	.35	.55				1.65	1.3
24		.35		.55				1.5	1.65
25		.40	.20	.55			.62	1.8	1.45
26		.40		.60			.18	2.5	1.2
27		.35	.35	1.15			.35	2.0	1.1
28		.30	.35	.80				2.4	1.1
29		.30	.35	.65			.58	3.9	1.0
30		.35	.35	.70			1.25	4.8	.85
31			.35	.70				4.2	

NOTE.—Gage height estimated by observer Apr. 18, 1912. No record June 14, 1912.

Rating tables for Tuolumne River at Lagrange bridge, Lagrange, Cal.

Jan. 1 to Dec. 31, 1895.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
3.80	61	4.40	299	5.00	800	6.50	2,590
4.00	95	4.60	439	5.50	1,310	7.00	3,280
4.20	129	4.80	606	6.00	1,910		

Jan. 1 to Dec. 31, 1896.

3.50	25	4.90	670	6.30	2,670	8.40	6,660
3.60	30	5.00	750	6.40	2,860	8.60	7,040
3.70	40	5.10	860	6.50	3,050	8.80	7,420
3.80	55	5.20	970	6.60	3,240	9.00	7,800
3.90	75	5.30	1,080	6.70	3,430	9.20	8,180
4.00	100	5.40	1,190	6.80	3,620	9.40	8,560
4.10	132	5.50	1,300	6.90	3,810	9.60	8,940
4.20	174	5.60	1,460	7.00	4,000	9.80	9,320
4.30	227	5.70	1,620	7.20	4,380	10.00	9,700
4.40	280	5.80	1,780	7.40	4,760	10.50	10,700
4.50	350	5.90	1,940	7.60	5,140	10.90	11,500
4.60	430	6.00	2,100	7.80	5,520		
4.70	510	6.10	2,290	8.00	5,900		
4.80	590	6.20	2,480	8.20	6,280		

Rating tables for Tuolumne River at Lagrange bridge, Lagrange, Cal.—Continued.

Jan. 1, 1897, to Dec. 31, 1898.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
3.00	0	4.30	220	5.60	1,620	7.80	7,240
3.10	8	4.40	260	5.70	1,840	8.00	7,890
3.20	16	4.50	300	5.80	2,060	8.20	8,400
3.30	24	4.60	390	5.90	2,280	8.40	9,000
3.40	32	4.70	480	6.00	2,500	8.60	9,600
3.50	40	4.80	570	6.20	3,020	8.80	10,200
3.60	52	4.90	660	6.40	3,540	9.00	10,800
3.70	64	5.00	750	6.60	4,060	9.50	12,300
3.80	76	5.10	880	6.80	4,580	10.00	13,800
3.90	88	5.20	1,010	7.00	5,100	10.50	15,300
4.00	100	5.30	1,140	7.20	5,620		
4.10	140	5.40	1,270	7.40	6,140		
4.20	180	5.50	1,400	7.60	6,680		

Jan. 1 to Dec. 31, 1899.

3.40	0	4.80	570	6.20	2,490	8.50	9,000
3.60	15	5.00	750	6.40	2,900	9.00	10,600
3.80	45	5.20	950	6.60	3,345	9.50	12,200
4.00	85	5.40	1,180	6.80	3,830	10.00	13,800
4.20	120	5.60	1,440	7.00	4,320	11.00	17,000
4.40	250	5.80	1,740	7.50	5,760	12.00	20,200
4.60	410	6.00	2,080	8.00	7,400	13.00	23,400

Jan. 1 to Dec. 31, 1900.

3.20	2	3.40	7	3.60	25	.....	.....

NOTE.—Above gage height 3.6 feet the table for 1900 is the same as the 1899 table.

Jan. 1 to Dec. 31, 1901.

3.40	7	3.80	55	4.20	200	4.60	410
3.60	25	4.00	115	4.40	300	4.80	560

NOTE.—Above gage height 4.80 feet the table for 1901 is the same as the 1899 table.

Jan. 1 to Dec. 31, 1902.

5.40	1,180	6.60	3,610	7.60	6,450	8.60	10,140
5.60	1,480	6.80	4,100	7.80	7,120	8.80	10,950
5.80	1,850	7.00	4,630	8.00	7,830	9.00	11,780
6.00	2,260	7.20	5,200	8.20	8,580	9.20	12,630
6.20	2,690	7.40	5,810	8.40	9,350	9.40	13,500
6.40	3,140						

NOTE.—Below gage height 5.6 feet the table for 1902 is the same as the 1901 table.

Jan. 1 to Dec. 31, 1903.

5.00	750	6.40	3,200	7.80	7,440	9.20	12,620
5.20	1,000	6.60	3,700	8.00	8,150	9.40	13,400
5.40	1,310	6.80	4,230	8.20	8,870	9.60	14,180
5.60	1,640	7.00	4,800	8.40	9,600	9.80	14,960
5.80	1,980	7.20	5,410	8.60	10,340	10.00	15,750
6.00	2,340	7.40	6,060	8.80	11,100	10.50	17,750
6.20	2,760	7.60	6,740	9.00	11,860	11.00	19,800

NOTE.—Below gage height 5.0 feet the table for 1903 is the same as the 1901 table.

Rating tables for Tuolumne River at Lagrange bridge, Lagrange, Cal.—Continued.

Jan. 1 to Dec. 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
3.20	1	4.50	360	5.80	2,100	7.20	5,700
3.30	10	4.60	430	5.90	2,300	7.40	6,300
3.40	20	4.70	510	6.00	2,500	7.60	7,000
3.50	30	4.80	600	6.10	2,700	7.80	7,700
3.60	40	4.90	700	6.20	2,900	8.00	8,400
3.70	50	5.00	810	6.30	3,150	8.20	9,100
3.80	70	5.10	930	6.40	3,400	8.40	9,900
3.90	90	5.20	1,060	6.50	3,650	8.60	10,700
4.00	110	5.30	1,200	6.60	3,900	8.80	11,500
4.10	150	5.40	1,350	6.70	4,200	9.00	12,300
4.20	200	5.50	1,520	6.80	4,500	9.50	14,300
4.30	250	5.60	1,710	6.90	4,800	10.00	16,300
4.40	300	5.70	1,900	7.00	5,100		

Jan. 1 to Dec. 31, 1905.

3.10	1	4.40	280	5.70	1,810	8.00	8,060
3.20	5	4.50	340	5.80	2,000	8.20	8,780
3.30	10	4.60	410	5.90	2,200	8.40	9,500
3.40	20	4.70	490	6.00	2,400	8.60	10,260
3.50	30	4.80	580	6.20	2,830	8.80	11,050
3.60	40	4.90	680	6.40	3,300	9.00	11,850
3.70	55	5.00	790	6.60	3,800	9.20	12,660
3.80	70	5.10	910	6.80	4,320	9.40	13,480
3.90	90	5.20	1,030	7.00	4,880	9.60	14,320
4.00	120	5.30	1,170	7.20	5,470	9.80	15,160
4.10	150	5.40	1,310	7.40	6,070	10.00	16,000
4.20	190	5.50	1,470	7.60	6,700		
4.30	230	5.60	1,630	7.80	7,360		

Jan. 1, 1906, to Mar. 16, 1907.

3.00	0	4.20	180	5.40	1,300	7.20	5,020
3.10	1	4.30	220	5.50	1,440	7.40	5,570
3.20	5	4.40	270	5.60	1,590	7.60	6,140
3.30	10	4.50	330	5.70	1,750	7.80	6,750
3.40	20	4.60	400	5.80	1,910	8.00	7,390
3.50	30	4.70	480	5.90	2,080	8.20	8,030
3.60	40	4.80	570	6.00	2,260	8.40	8,700
3.70	55	4.90	670	6.20	2,650	8.60	9,390
3.80	70	5.00	780	6.40	3,080	8.80	10,090
3.90	90	5.10	900	6.60	3,530	9.00	10,810
4.00	115	5.20	1,030	6.80	4,000	10.00	14,610
4.10	145	5.30	1,160	7.00	4,500	11.00	18,610

NOTE.—This table is based on 18 discharge measurements made during 1906 and earlier low water measurements, and is well defined.

Mar. 17 to Dec. 31, 1907.

2.50	0	4.00	640	5.50	2,490	8.00	8,000
2.60	2	4.10	750	5.60	2,645	8.20	8,540
2.70	6	4.20	860	5.70	2,805	8.40	9,120
2.80	12	4.30	970	5.80	2,970	8.60	9,720
2.90	21	4.40	1,080	5.90	3,140	8.80	10,360
3.00	35	4.50	1,190	6.00	3,320	9.00	11,000
3.10	55	4.60	1,305	6.20	3,690	10.00	14,500
3.20	85	4.70	1,420	6.40	4,100	11.00	18,600
3.30	125	4.80	1,540	6.60	4,540	12.00	23,200
3.40	175	4.90	1,655	6.80	5,010	13.00	29,000
3.50	235	5.00	1,790	7.00	5,500	14.00	36,200
3.60	300	5.10	1,920	7.20	6,000	15.00	44,800
3.70	370	5.20	2,055	7.40	6,500	16.00	54,000
3.80	450	5.30	2,195	7.60	7,000		
3.90	540	5.40	2,340	7.80	7,500		

NOTE.—This table is not applicable for conditions of obstructed channel. It is based on six discharge measurements made during 1907 and previous high-water measurements and is well defined. The upper extension of curve is determined by applying the weir formula to simultaneous gage heights on the Lagrange dam.

Rating tables for Tuolumne River at Lagrange bridge, Lagrange, Cal.—Continued.

Jan. 1 to Dec. 31, 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
2.60	10	3.30	230	4.00	810	4.70	1,860
2.70	20	3.40	290	4.10	930	4.80	2,050
2.80	40	3.50	360	4.20	1,060	4.90	2,250
2.90	60	3.60	430	4.30	1,200	5.00	2,460
3.00	90	3.70	510	4.40	1,350	5.10	2,680
3.10	130	3.80	600	4.50	1,510		
3.20	180	3.90	700	4.60	1,680		

NOTE.—This table is not applicable for obstructed-channel conditions. It is based on six discharge measurements made during 1908 and is well defined.

Rating table for Tuolumne River at Lagrange dam, near Lagrange, Cal., for 1908–12.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
0.10	29	1.80	2,180	3.50	5,920	6.40	14,650
.20	81	1.90	2,370	3.60	6,180	6.60	15,360
.30	149	2.00	2,560	3.70	6,440	6.80	16,080
.40	229	2.10	2,750	3.80	6,700	7.00	16,800
.50	320	2.20	2,950	3.90	6,970	7.20	17,520
.60	421	2.30	3,160	4.00	7,240	7.40	18,240
.70	530	2.40	3,370	4.20	7,800	7.60	18,980
.80	648	2.50	3,580	4.40	8,360	7.80	19,740
.90	772	2.60	3,800	4.60	8,930	8.00	20,500
1.00	905	2.70	4,020	4.80	9,510	9.00	24,400
1.10	1,040	2.80	4,240	5.00	10,110	10.00	28,600
1.20	1,180	2.90	4,470	5.20	10,740	11.00	33,000
1.30	1,340	3.00	4,700	5.40	11,380	12.00	37,600
1.40	1,500	3.10	4,940	5.60	12,020	13.00	42,400
1.50	1,660	3.20	5,180	5.80	12,660	14.00	47,400
1.60	1,830	3.30	5,420	6.00	13,300	15.00	52,600
1.70	2,000	3.40	5,670	6.20	13,960	16.00	57,900

NOTE.—This table is not applicable for conditions of obstructed channel. It is based on 20 discharge measurements made during 1906 to 1908 and the weir formula $Q=905\ h^{\frac{3}{2}}$ and is fairly well defined.

Daily discharge, in second-feet, of Tuolumne River at Lagrange dam, near Lagrange, Cal., for 1909–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
1909.							
1	29	2,180	2,180	2,370	7,940	12,300	6,440
2	81	1,830	2,280	2,560	8,360	14,500	6,570
3	229	5,420	2,660	2,850	8,640	14,600	7,240
4	320	3,370	2,750	3,580	8,930	15,400	6,840
5	29	3,580	3,060	2,750	9,810	15,400	4,940
6	3,800	3,370	2,950	2,460	9,510	13,000	3,160
7	2,370	5,180	3,160	2,460	9,510	10,400	2,180
8	1,500	5,670	2,950	2,750	9,810	9,510	2,090
9	4,240	3,060	2,560	3,370	9,220	8,640	2,180
10	2,180	2,750	2,370	3,910	8,930	8,500	2,090
11	1,260	7,520	2,180	3,370	6,970	8,780	2,180
12	905	21,600	2,000	3,160	5,800	9,510	2,560
13	14,300	10,700	2,000	3,800	4,940	10,100	2,750
14	26,500	6,180	2,370	4,700	5,420	8,930	2,560
15	19,400	4,940	2,460	5,800	5,920	9,510	2,090
16	11,400	4,700	2,850	6,970	5,800	8,640	1,830
17	8,360	4,700	2,560	7,240	5,670	7,940	1,500
18	6,970	4,580	2,560	7,520	5,920	6,310	1,110
19	4,240	4,020	2,560	7,380	6,440	6,050	710
20	4,240	3,580	2,370	5,670	7,800	4,940	476

Daily discharge, in second-feet, of Tuolumne River at Lagrange dam, near Lagrange, Cal., for 1909–1912—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
1909.							
21	24,200	4,130	2,660	4,700	8,640	6,180	274
22	13,000	3,370	2,560	4,240	6,970	7,940	274
23	7,240	2,950	2,560	4,020	4,820	9,510	530
24	5,180	2,750	2,370	4,470	3,800	10,100	421
25	8,780	2,560	2,280	4,940	4,020	10,100	274
26	6,050	2,370	2,180	5,800	6,440	8,640	149
27	5,800	2,180	1,920	7,240	7,660	7,520	81
28	4,020	2,180	1,830	6,970	8,080	7,660	.....
29	3,160	.....	2,750	6,180	5,670	7,660	.....
30	2,560	.....	2,690	6,840	4,940	7,240	.....
31	2,660	.....	2,180	.....	9,360	.....	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
1	.....	320	2,660	13,300	2,560	2,000	3,690	3,910	8,780	.....	.....	.....
2	17	320	12,800	5,670	2,000	2,370	3,690	3,160	8,080	.....	.....	.....
3	.....	779	5,060	3,800	2,180	2,560	3,580	4,240	6,180	.....	.....	.....
4	.....	799	3,370	3,370	1,830	3,260	3,580	4,020	5,060	.....	.....	.....
5	.....	710	2,850	3,920	1,660	3,160	3,260	2,660	3,800	.....	.....	.....
6	.....	620	2,560	4,470	1,660	4,130	4,020	2,850	4,020	.....	.....	.....
7	.....	530	3,160	2,370	1,660	3,060	3,800	4,470	3,480	.....	.....	.....
8	.....	710	2,850	2,180	1,660	2,750	4,470	6,440	3,060	.....	.....	.....
9	.....	710	20,900	2,000	1,500	3,160	4,940	8,220	2,950	.....	.....	.....
10	.....	1,420	6,180	2,000	1,110	2,950	5,670	8,360	3,060	.....	.....	.....
11	.....	1,420	3,910	1,830	1,180	2,950	5,540	8,500	3,370	.....	.....	.....
12	.....	1,340	3,380	1,700	1,500	2,950	4,240	6,970	3,480	.....	.....	.....
13	.....	1,180	2,850	1,580	1,660	3,060	4,130	8,080	2,850	.....	.....	.....
14	.....	1,180	2,660	2,370	1,660	3,160	4,580	8,080	2,660	.....	.....	.....
15	.....	1,180	2,370	2,180	1,500	2,560	4,940	8,080	2,280	.....	.....	.....
16	.....	1,180	2,180	4,240	1,110	2,180	5,800	8,220	1,920	.....	.....	1,340
17	.....	1,180	2,090	3,160	972	2,000	6,700	6,440	2,000	.....	.....	648
18	.....	1,180	1,920	2,560	905	3,160	7,520	6,310	1,920	.....	.....	115
19	.....	1,180	1,580	2,180	1,340	6,700	8,080	6,440	1,660	.....	.....	.....
20	.....	1,740	1,740	1,830	1,420	3,800	8,640	6,700	1,500	.....	.....	.....
21	.....	16,800	1,740	1,830	1,040	3,690	7,100	6,700	1,340	.....	.....	.....
22	.....	6,970	1,580	2,000	1,260	3,690	7,380	8,080	1,110	.....	.....	.....
23	229	4,360	1,500	2,950	1,180	2,750	7,800	8,640	905	.....	.....	.....
24	115	5,300	1,500	4,700	1,110	2,660	8,500	8,640	648	.....	.....	.....
25	115	5,670	1,500	2,560	1,040	2,560	8,640	8,080	421	.....	.....	.....
26	115	5,060	1,500	3,370	1,340	2,560	9,220	7,240	530	.....	.....	.....
27	149	3,370	1,180	3,370	1,260	2,660	9,220	7,660	530	.....	.....	.....
28	149	2,660	1,180	2,750	1,830	2,850	9,960	7,800	476	.....	.....	.....
29	229	2,560	2,560	2,560	.....	3,260	7,100	7,800	274	.....	.....	.....
30	530	2,560	4,700	2,560	.....	3,800	5,060	8,220	81	.....	.....	.....
31	320	.....	10,900	2,370	.....	3,260	.....	8,930	.....	.....	.....	.....
1910–11.												
1	.....	149	320	274	16,800	3,060	7,100	5,230	6,050	7,240	648	.....
2	.....	149	421	263	9,510	3,690	7,460	5,230	6,440	7,800	443	.....
3	.....	149	320	252	6,440	5,180	8,020	5,420	8,780	8,500	274	.....
4	.....	149	515	240	6,700	10,400	6,310	6,390	11,600	9,450	229	.....
5	.....	149	710	229	5,420	9,630	9,280	9,080	12,800	8,780	115	.....
6	.....	149	753	229	4,470	7,690	9,810	6,970	13,600	8,990	23	.....
7	.....	149	795	229	3,800	18,100	6,750	5,870	12,300	9,080	.....	.....
8	648	149	838	229	3,480	18,800	5,800	5,540	12,000	8,360	.....	.....
9	.....	149	1,060	229	3,260	13,000	6,920	6,050	11,000	7,020	.....	.....
10	.....	149	1,280	2,280	3,420	13,500	6,310	5,670	12,300	6,700	.....	.....
11	.....	149	1,500	1,040	3,580	8,080	4,820	6,130	14,600	6,700	.....	.....
12	.....	149	1,500	2,160	2,950	5,970	4,240	7,020	15,700	6,840	.....	.....
13	421	177	1,200	7,380	3,910	4,700	3,620	6,490	16,500	6,920	.....	.....
14	274	205	905	5,970	3,580	4,290	3,540	6,440	15,200	7,940	.....	.....
15	189	233	589	3,910	3,160	4,150	3,260	5,300	14,600	7,580	.....	.....
16	115	261	533	2,280	2,850	3,060	3,540	4,290	15,700	8,020	.....	.....
17	268	289	477	1,660	2,560	3,370	3,760	3,800	15,900	8,220	.....	.....
18	421	316	421	1,500	2,460	4,240	4,420	3,670	15,600	7,660	.....	.....
19	370	343	421	1,420	2,460	4,240	5,370	5,130	15,700	6,050	.....	.....
20	320	370	421	1,560	2,460	4,240	5,470	6,570	15,300	4,940	.....	.....

Daily discharge, in second-feet, of Tuolumne River at Lagrange dam, near Lagrange, Cal., for 1909–1912—Continued.

Day.	Oct	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910-11.												
21	320	370	400	4,750	2,280	4,240	5,230	8,080	14,800	5,870	.....	.....
22	290	423	380	2,770	2,180	4,130	5,620	9,870	12,500	2,560	.....	.....
23	259	477	360	2,520	1,970	4,650	6,490	12,000	10,600	2,410	.....	.....
24	229	530	340	10,600	1,800	4,470	7,300	12,100	7,800	2,850	.....	.....
25	209	512	320	12,200	1,690	4,750	8,080	9,080	6,440	2,410	.....	.....
26	189	494	274	5,600	1,580	4,750	8,420	6,490	7,940	1,920	.....	.....
27	169	476	229	3,580	1,660	4,750	7,460	6,840	10,600	1,580	.....	.....
28	149	437	229	2,750	1,530	5,060	5,670	7,660	12,100	1,370	.....	.....
29	149	398	229	8,670	.....	5,370	4,750	7,660	10,400	1,180	.....	.....
30	149	359	229	52,500	.....	5,970	4,580	7,100	7,240	1,010	.....	.....
31	149	.....	229	46,900	.....	6,570	.....	6,050	.....	838	.....	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911-12.									
1	.....	.....	274	189	476	.....	.....	1,040	8,360
2	.....	.....	274	189	530	.....	.....	905	10,100
3	.....	.....	274	189	476	.....	95	554	11,100
4	.....	.....	.....	189	476	.....	320	443	11,400
5	.....	.....	189	189	476	.....	302	673	12,000
6	.....	.....	189	229	476	320	114	852	9,810
7	.....	.....	229	229	476	589	589	1,500	9,510
8	.....	.....	189	229	421	14	1,500	1,660	8,360
9	.....	.....	189	274	370	.....	1,580	1,920	5,670
10	.....	.....	229	274	160	.....	1,830	4,020	4,940
11	320	.....	189	710	.....	.....	1,830	3,580	4,700
12	.....	.....	189	530	.....	.....	1,180	3,800	5,180
13	.....	.....	189	476	.....	265	486	4,940	5,180
14	.....	229	189	320	.....	.....	157	4,470	4,280
15	.....	.....	149	320	.....	.....	135	5,670	3,370
16	.....	.....	189	320	.....	.....	905	6,700	2,950
17	.....	.....	189	476	.....	.....	772	6,440	2,560
18	.....	.....	189	530	.....	.....	772	7,240	2,950
19	.....	.....	229	320	.....	.....	135	7,520	2,950
20	.....	.....	189	421	.....	.....	.....	5,180	3,160
21	.....	149	149	370	.....	.....	.....	4,020	2,560
22	.....	149	189	370	.....	.....	.....	2,370	1,500
23	.....	274	189	370	.....	.....	.....	1,920	1,340
24	.....	189	.....	370	.....	.....	.....	1,660	1,920
25	.....	229	81	370	.....	.....	443	2,180	1,580
26	.....	229	.....	421	.....	.....	71	3,580	1,180
27	.....	189	189	1,110	.....	.....	189	2,560	1,040
28	.....	149	189	648	.....	.....	94	3,370	1,040
29	.....	149	189	476	.....	40	401	6,970	905
30	.....	189	189	530	.....	.....	1,260	9,510	710
31	.....	.....	189	530	.....	.....	.....	7,800	.....

NOTE.—Daily discharge at Lagrange Dam determined from a rating curve developed from current meter discharge measurements and from the weir formula $Q=905h^{\frac{3}{2}}$. No water flowing over the dam July 28 to Oct. 1, 1909; Oct. 3 to Oct. 22, 1909; July 1 to Sept. 15, 1910; Sept. 19 to Oct. 7, 1910; Aug. 7 to Oct. 10, 1911; Oct. 12 to Nov. 13, 1911; Nov. 15 to Nov. 20, 1911; Feb. 11 to Mar. 5, 1912; Mar. 9–12, 14–28, 1912; Mar. 30 to Apr. 2, 1912; Apr. 20–24, 1912; or June 30, 1912. Discharge estimated Feb. 10, Mar. 8, 13, and 29, Apr. 6 and 28, 1912. Discharge interpolated for all other days of missing gage heights.

Monthly discharge of Tuolumne River at Lagrange, Cal., for 1895–1912.

[Drainage area, 1,500 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1895.							
September	2,182	78	263	0.175	0.20	15,635	
1895–96.							
October	299	78	134	.089	.10	8,231	
November	129	112	113	.075	.08	6,698	
December	1,004	129	270	180	.21	16,614	
January	7,610	350	2,312	1.54	1.78	142,159	
February	1,780	1,080	1,164	.78	.84	66,954	
March	11,798	1,006	2,725	1.82	2.10	167,578	
April	7,990	2,670	3,522	2.34	2.60	209,574	
May	10,100	2,670	4,429	2.95	3.40	272,371	
June	9,320	5,140	7,692	5.13	5.74	457,705	
July	5,330	960	3,003	2.00	2.31	184,677	
August	3,050	227	485	.32	.37	29,828	
September	1,620	132	432	.29	.32	25,742	
The year	11,798	78	2,190	1.46	19.85	1,590,000	
1896–97.							
October	350	75	19	.08	.09	7,366	
November	5,710	227	1,135	.75	.83	67,543	
December	3,620	670	1,083	.72	.83	66,603	
January	3,930	660	1,231	.82	.94	75,692	
February	13,200	1,840	5,172	3.45	3.59	287,238	
March	10,800	2,500	4,032	2.69	3.10	247,920	
April	13,500	3,280	7,735	5.15	5.75	460,263	
May	14,700	9,600	11,923	7.94	9.15	733,121	
June	9,300	2,500	5,673	3.78	4.22	337,566	
July	4,840	480	2,181	1.45	1.67	134,105	
August	570	76	237	.16	.18	14,573	
September	140	28	86	.06	.07	5,117	
The year	14,700	28	3,376	2.25	30.42	2,440,000	
1897–98.							
October	750	76	222	.15	.17	13,650	
November	3,540	260	768	.51	.57	45,699	
December	4,060	570	1,104	.74	.85	67,883	
January	750	300	454	.30	.35	27,916	
February	2,500	300	900	.60	.63	49,983	
March	2,060	750	1,224	.82	.94	75,261	
April	7,800	1,270	4,014	2.67	2.78	238,849	
May	6,960	2,280	4,620	3.08	3.55	284,075	
June	3,280	750	2,247	1.50	1.73	133,705	
July	750	88	277	.19	.21	17,032	
August	100	76	85	.06	.07	5,226	
September	88	0	20	.01	.01	1,190	
The year	7,800	0	1,328	.885	11.86	960,000	
1898–99.							
October	88	32	52	.03	.04	3,197	
November	82	16	39	.03	.03	2,321	
December	2,060	32	256	.17	.20	15,741	
January	1,940	110	487	.32	.37	29,945	
February	1,440	410	740	.49	.51	41,098	
March	21,800	570	3,616	2.41	2.78	222,341	
April	8,040	2,285	5,193	3.46	3.86	309,004	
May	8,680	2,080	4,513	3.01	3.47	277,495	
June	9,960	2,285	6,060	4.04	4.51	360,594	
July	2,490	330	1,010	67	.77	62,103	
August	570	45	145	.10	.11	8,916	
September	45	15	33	.02	.02	1,964	
The year	21,800	15	1,845	1.23	16 67	1,330,000	
1899–1900.							
October	2,285	5	505	.34	.39	31,051	
November	6,400	660	2,428	1.62	1.81	144,476	
December	8,040	850	3,047	2.03	2.04	187,354	
January	13,160	1,060	2,384	1.59	1.83	146,586	
February	1,300	750	967	.64	.67	53,704	
March	3,100	950	2,343	1.56	1.80	144,065	

Monthly discharge of Tuolumne River at Lagrange, Cal., for 1895–1912—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1899–1900.							
April	4,320	1,440	2,389	1.59	1.77	142,155	
May	9,320	3,100	6,796	4.53	5.23	417,870	
June	8,680	2,285	5,291	3.53	3.94	314,836	
July	1,740	140	694	.46	.53	42,672	
August	140	0	43	.03	.03	2,644	
September	110	0	11	.01	.01	655	
The year	13,160	0	2,242	1.49	20.05	1,630,000	
1900–1901.							
October	5,760	35	1,228	.82	.94	75,507	
November	14,440	410	2,536	1.69	1.89	150,902	
December	2,080	850	1,332	.89	1.02	81,902	
January	18,280	560	3,351	2.23	2.58	206,145	
February	19,240	1,440	7,203	4.80	5.00	400,090	
March	7,080	2,080	3,719	2.48	2.86	228,733	
April	7,080	1,740	3,960	2.64	2.94	235,696	
May	13,160	4,075	8,035	5.36	6.18	494,114	
June	13,160	4,900	9,387	6.26	6.98	558,566	
July	9,960	1,440	3,700	2.47	2.85	227,566	
August	2,080	200	784	.52	.60	48,206	
September	350	55	175	.12	.13	10,413	
The year	19,240	35	3,784	2.52	33.90	2,720,000	
1901–2.							
October	1,590	0	211	.14	.16	12,974	
November	1,300	300	574	.38	.43	34,155	
December	5,800	200	1,339	.89	1.02	82,332	
January	850	200	352	.23	.27	21,644	
February	6,780	250	1,443	.96	1.00	80,140	
March	5,810	1,320	2,290	1.53	1.76	140,807	
April	12,934	1,606	5,003	3.33	3.71	297,699	
May	11,740	2,850	6,656	4.43	5.11	409,262	
June	11,760	3,560	6,925	4.61	5.14	412,066	
July	3,110	730	1,403	.93	1.07	86,267	
August	647	112	378	.25	.29	23,242	
September	200	35	91	.06	.07	5,415	
The year	12,934	0	2,222	1.48	20.03	1,610,000	
1902–3.							
October	560	15	113	.08	.09	6,948	
November	2,690	250	676	.45	.50	40,225	
December	2,690	350	809	.54	.62	49,743	
January	17,350	250	2,066	1.38	1.59	127,033	
February	4,038	1,273	1,791	1.19	1.24	99,467	
March	16,659	1,422	3,368	2.24	2.58	207,090	
April	20,342	2,860	6,006	4.00	4.46	357,382	
May	13,808	2,412	8,300	5.53	6.37	510,347	
June	12,680	4,676	7,814	5.21	5.81	464,965	
July	4,507	407	1,423	.95	1.10	87,497	
August	491	134	263	.18	.21	16,171	
September	142	89	105	.07	.08	6,248	
The year	20,342	15	2,728	1.82	24.65	1,970,000	
1903–4.							
October	107	26	72	.05	.06	4,427	
November	3,451	46	1,038	.69	.77	61,765	
December	607	293	432	.29	.33	26,563	
January	538	331	434	.29	.33	26,686	
February	15,882	311	4,127	2.75	2.97	237,388	
March	17,665	3,275	5,949	3.96	4.56	365,790	
April	10,606	4,374	6,406	4.27	4.76	381,183	
May	17,850	4,405	11,692	7.79	8.98	718,913	
June	13,858	6,130	9,576	6.38	7.12	569,812	
July	5,530	1,046	2,970	1.98	2.28	182,618	
August	1,291	325	769	.51	.59	47,284	
September	3,172	97	652	.43	.48	38,797	
The year	17,850	26	3,676	2.45	33.23	2,660,000	

Monthly discharge of Tuolumne River at Lagrange, Cal., for 1895–1912—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet	
1904–5.							
October	15,855	1,520	3,535	2.36	2.72	217,359	
November	1,520	510	808	.54	.60	48,079	
December	2,900	275	463	.31	.36	28,469	
January	1,810	535	745	.496	.57	45,810	
February	8,420	745	1,926	1.28	1.33	107,000	
March	13,070	1,871	3,487	2.32	2.68	214,400	
April	7,770	2,696	4,016	2.68	2.99	239,000	
May	11,360	2,866	5,927	3.95	4.55	364,400	
June	9,075	3,258	5,969	3.98	4.44	355,200	
July	3,403	427	1,344	.895	1.03	82,640	
August	345	103	212	.141	.16	13,040	
September	131	8	78.1	.052	.06	4,647	
The year	15,855	8	2,376	1.58	21.49	1,720,000	
1905–6.							
October	80	30	45.5	.030	.04	2,798	
November	135	48	62.2	.041	.05	3,701	
December	190	90	129	.086	.10	7,932	
January	21,400	55	2,860	1.91	2.20	176,000	
February	5,330	1,110	2,180	1.45	1.51	121,000	
March	24,400	2,320	7,180	4.79	5.52	441,000	
April	11,300	4,730	6,500	4.33	4.83	387,000	
May	16,800	5,510	11,100	7.40	8.53	682,000	
June	19,600	8,640	13,900	9.27	10.34	827,000	
July	18,200	4,530	11,600	7.73	8.91	713,000	
August	4,080	770	2,220	1.48	1.71	136,000	
September	831	288	470	.313	.35	28,000	
The year	24,400	30	4,854	3.24	44.09	3,530,000	
1906–7.							
October	307	70	216	.144	.17	13,300	
November	570	10	243	.162	.18	14,500	
December	6,750	90	1,470	.980	1.13	90,400	
January	13,200	1,300	2,460	1.64	1.89	151,000	A.
February	9,910	2,470	4,240	2.83	2.95	235,000	A.
March	52,000	2,230	11,200	7.47	8.61	689,000	A.
April	10,700	9,230	9,810	6.54	7.30	584,000	A.
May	13,900	8,300	10,500	7.00	8.07	646,000	A.
June	17,300	6,960	11,200	7.47	8.33	666,000	A.
July	13,200	4,360	8,210	5.47	6.31	505,000	A.
August	4,630	754	2,140	1.43	1.65	132,000	A.
September	820	264	496	.331	.37	29,500	A.
The year	52,000	10	5,182	3 45	46.96	3,760,000	
1907–8.							
October	640	55	304	.203	.23	18,700	A.
November	540	235	322	.215	.24	19,200	A.
December	1,400	235	634	.423	.49	39,000	A.
January	2,680	756	1,180	.787	.91	72,600	A.
February	2,270	806	1,000	.667	.72	57,500	A.
March	3,380	1,380	2,120	1.41	1.63	130,000	A.
April	6,490	1,280	3,500	2.33	2.60	208,000	A.
May	6,720	2,560	4,100	2.73	3.15	252,000	A.
June	4,710	1,630	3,070	2.05	2.29	183,000	A.
July	1,820	548	1,020	.680	.78	62,700	A.
August	927	151	390	.260	.30	24,000	B.
September	153	80	116	.077	.09	6,900	B.
The year	6,720	55	1,480	.987	13.43	1,070,000	
1908–9.							
October	1,540	60	219	.146	.17	13,500	B.
November	470	50	218	.145	.16	13,000	B.
December	635	260	362	.241	.28	22,300	B.
January	26,700	223	6,550	4.37	5.04	403,000	A.
February	21,600	2,300	4,930	3.29	3.43	274,000	A.
March	3,690	2,340	2,860	1.91	2.20	176,000	A.
April	8,680	2,880	5,670	3.78	4.22	337,000	A.
May	11,200	5,160	8,400	5.60	6.46	516,000	A.
June	16,700	6,350	10,800	7.20	8.03	643,000	A.
July	8,640	916	3,410	2.27	2.62	210,000	A.
August	871	228	489	.326	.38	30,100	A.
September	291	71	151	.101	.11	8,980	B.
The year	26,700	50	3,672	2.45	33.10	2,650,000	

Monthly discharge of Tuolumne River at Lagrange, Cal., for 1895–1912—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1909–10.							
October	530	80	225	.150	.17	13,800	B.
November	16,800	320	2,500	1.67	1.86	149,000	A.
December	20,900	1,180	3,770	2.51	2.89	232,000	A.
January	13,300	1,580	3,150	2.10	2.42	194,000	A.
February	2,560	1,580	1,900	1.27	1.32	106,000	A.
March	7,720	2,700	3,870	2.58	2.97	236,000	A.
April	11,200	3,890	6,990	4.66	5.20	416,000	A.
May	9,470	3,690	7,510	5.01	5.78	462,000	A.
June	9,320	1,470	3,340	2.23	2.49	199,000	A.
July	1,380	376	791	.527	.61	48,600	A.
August	338	61	135	.090	.10	8,300	B.
September	1,680	12	226	.151	.17	13,400	B.
The year	20,900	12	2,867	1.91	25.98	2,080,000	
1910–11.							
October	717	0	210	.140	.16	12,900	B.
November	530	149	282	.188	.21	16,800	B.
December	1,500	229	587	.391	.45	36,100	B.
January	52,600	289	6,070	4.05	4.67	373,000	A.
February	16,900	1,880	3,970	2.65	2.76	220,000	A.
March	18,900	3,420	7,300	4.87	5.62	449,000	A.
April	10,700	4,620	7,360	4.91	5.48	438,000	A.
May	13,800	5,320	8,390	5.59	6.44	516,000	A.
June	18,200	7,720	13,800	9.20	10.26	821,000	A.
July	11,100	2,070	7,340	4.89	5.64	451,000	A.
August	2,290	476	1,040	.693	.80	64,000	A.
September	470	172	262	.175	.20	15,600	B.
The year	52,600	0	4,718	3.15	42.69	3,410,000	
1911–12.							
October	530	57	152	.101	.12	9,350	B.
November	347	16	142	.095	.11	8,450	B.
December	340	41	226	.151	.17	13,900	B.
January	1,160	249	450	.300	.35	27,700	B.
February	651	286	474	.316	.34	27,300	B.
March	1,740	331	982	.655	.76	60,400	B.
April	2,890	979	1,690	1.13	1.26	101,000	A.
May	11,300	2,100	5,460	3.64	4.20	336,000	A.
June	13,800	1,790	6,420	4.28	4.78	382,000	A.
The period						966,000	

NOTE.—Prior to 1902 these values are for the river only. Values for 1902 include the Turlock Canal. After 1902 the values include both the Modesto and Turlock canals. Values for 1908, 1911, and 1912 also include the Lagrange Water & Power Co.'s canal. Values from Mar. 1 to Apr. 14, 1896, are taken from the station at Modesto.

MODESTO CANAL NEAR LAGRANGE, CAL.

The Modesto canal, which diverts water from the right bank of Tuolumne River, 2 miles northeast of Lagrange, is owned by the Modesto irrigation district. The water is taken through a concrete bulkhead at the end of Lagrange dam and is used for irrigating 81,200 acres of land around Modesto in Stanislaus County. The district has filed on 640 second-feet, but the maximum capacity of the canal at present is less than 600 second-feet.

The principal part of the construction work on this canal was done prior to 1892, but on account of litigation the canal was not finished until April, 1903. A gage-height record has been kept since April 26, 1903, when a gage was installed in Indian Hill flume, near Lagrange,

Cal. On July 12, 1904, the station was moved to the flume near the intake in order that more gage readings could be made and their fluctuations better interpreted. The gage is an iron staff in a concrete well 460 feet below headgates and below spillway. Measurements are made from a footbridge at a concrete section 550 feet below the gage.

The records for this station are considered good.

Discharge measurements of Modesto canal near Lagrange, Cal., in 1903–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1903.		*Feet.*	*Sec.-feet.*
Apr. 7	S. G. Bennett	1.95	111
8	do	2.14	127
9	do	1.20	41.4
9	do	.70	13.8
Sept. 23	do	1.00	25
Nov. 27	do	2.00	115
1904.			
Jan. 21	F. W. Huber	2.55	170
Mar. 26	Bennett, Clapp, and Murphy	2.60	196
May 9	S. G. Bennett	2.78	218
9	do	1.27	64
9	do	1.90	119
9	do	.65	24
June 8	O. W. Peterson	1.60	86
July 21	do	3.10	280
Aug. 22	do	2.50	186
1905.			
Apr. 6	O. W. Peterson	3.40	291
May 24	R. S. Hawley	3.15	247
June 17	do	3.85	323
July 21	do	2.95	222
1906.			
May 16	C. H. Lee	2.80	395
June 5	W. C. Sawyer	2.11	302
5	do	1.91	257
8	do	2.79	393
8	do	2.70	412
29	do	2.66	387
July 2	do	2.60	380
11	do	2.60	383
19	do	2.52	376
Aug. 6	Sawyer and Martin	2.46	362
Sept. 5	W. F. Martin	1.70	250
1907.		*Feet.*	*Sec.-feet.*
May 30	W. F. Martin	2.90	538
30	do	.55	43
30	do	.92	102
30	do	1.35	185
30	do	1.70	257
30	do	2.12	352
30	do	2.56	476
1908.			
May 1	W. A. Lamb	3.05	583
June 16	W. F. Martin	3.11	576
16	do	1.70	296
16	do	1.02	152
1909.			
June 2	W. F. Martin	3.20	538
Aug. 4	do	.33	15
4	do	1.31	152
4	do	2.20	333
4	do	1.86	252
1910.			
May 18	J. E. Stewart	3.38	570
18	do	3.22	538
18	do	2.60	414
18	do	2.00	298
18	do	1.50	192
18	do	.99	100
1911.			
May 13	J. E. Stewart	3.52	613
July 26	do	3.54	601
26	do	1.82	257
26	do	2.80	454
1912.			
Apr. 13	J. E. Stewart	3.86	658
May 29	do	4.20	696
29	do	4.18	698
July 13	do	2.37	355

Daily gage height, in feet, of Modesto canal near Lagrange, Cal., for 1903–1912.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1903.							1903.						
1		0.02	0.5	2.0	2.2	1.3	16		0.5	0.7	2.2	1.8	1.2
2		.05	.5	2.0	2.0	1.3	17		.5	.7	2.2	1.8	1.1
3		2.70	.5	2.0	2.0	1.2	18		.5	.7	2.2	1.7	1.1
4			2.0	2.0	1.9	1.2	19		.5	.7	2.2	1.7	1.1
5			1.6	2.0	1.8	1.2	20		.5	.7	2.0	1.7	1.1
6			1.1	2.0	1.8	1.2	21		.5	.7	1.0	1.6	1.1
7			1.0	2.0	1.8	1.2	22		.5	.7	.1	1.6	1.1
8		2.0	1.1	2.0	.02	1.2	23		.5		.3	1.7	1.1
9		2.0	1.3	1.5	1.8	1.2	24		.5		.3	1.6	1.1
10		0.5	.7	1.0	1.8	1.2	25		.5		1.9	1.5	1.4
11		.5	.7	1.0	1.9	1.2	26	0.30		1.2	1.9	1.5	1.0
12		.5	.7	1.4	1.9	1.2	27	.20		2.2	1.4	1.5	1.0
13		.5	.7	1.8	1.9	1.2	28	.05		2.3	1.5	1.4	1.0
14		.5	.7	1.8	1.9	1.2	29	.05		2.1	2.0	1.4	1.0
15		.5	.7	1.9	1.9	1.2	30	.05		2.0	.0	1.3	.9
							31		.5		2.0	1.3	

Daily gage height, in feet, of Modesto canal near Lagrange, Cal., for 1903–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903–4.												
1	1.4	0.6	2.0	2.5	2.3	0.95	.....	2.2	2.8	3.2	.....	1.8
2	1.4	.6	2.0	2.5	2.3	1.2	2.3	2.5	2.8	3.2	3.1	1.5
3	1.0	.6	2.1	2.5	2.3	1.7	2.3	2.7	3.0	3.2	3.15	1.5
4	1.0	.6	2.3	2.5	2.3	1.8	2.3	2.7	3.0	3.2	3.1	1.4
5	1.0	.6	2.3	2.5	2.6	1.8	2.3	2.7	3.0	3.2	3.05	1.5
6	1.0	.6	2.3	2.5	2.6	1.8	2.3	2.7	3.0	3.2	3.05	1.4
7	1.0	.6	2.3	2.5	2.6	2.1	2.3	2.7	3.0	3.2	3.1	1.3
8	1.0	.1	2.3	2.5	2.6	2.1	2.3	2.75	2.2	3.2	3.1	1.2
9	1.0	.1	2.3	2.5	2.6	2.1	2.3	2.0	2.2	3.2	3.05	1.2
10	1.0	.0	2.4	2.5	2.6	1.7	2.3	1.25	3.0	3.2	3.1	1.1
11	1.0	.0	2.5	2.5	2.6	1.7	2.4	2.3	3.15	3.2	3.1	.....
12	1.0	.0	2.5	2.5	2.7	2.0	.1	2.7	3.2	3.2	3.1	.....
13	1.0	1.1	2.5	2.5	1.6	2.3	1.2	2.9	3.1	3.25	2.95	.....
14	1.0	1.1	2.5	2.5	.05	2.3	2.35	2.9	3.1	3.25	2.7	.....
15	1.0	.0	2.5	2.5	.....	2.3	.45	2.9	3.15	3.25	2.65	.95
16	1.3	.0	2.5	2.5	.....	2.3	2.3	2.9	3.2	3.25	3.2	.95
17	1.5	.1	2.5	2.5	.....	2.3	2.3	2.9	3.2	3.25	3.15	1.35
18	.01	1.1	2.5	2.5	.....	2.4	2.6	2.9	3.2	3.25	3.15	1.35
19	.01	1.2	2.5	2.5	.....	2.4	2.6	2.9	3.2	3.25	3.2	1.45
20	1.6	1.0	2.5	2.5	.....	2.4	2.6	2.9	3.2	3.25	3.2	1.4
21	1.6	.6	2.5	2.4	.....	2.4	2.6	1.8	3.2	3.10	2.9	1.3
22	1.6	.6	2.5	2.4	.....	2.6	2.65	.....	3.2	3.15	2.6	1.1
23	1.6	.6	2.5	2.5	.....	2.6	2.7	1.35	3.2	.....	2.3	1.1
24	1.4	1.6	2.5	2.6	.4	2.6	2.7	1.45	3.2	.6	2.2	1.85
25	1.4	1.6	2.5	2.6	.8	2.65	2.7	1.85	3.2	.6	2.1	2.0
26	1.4	1.9	2.5	2.6	.75	2.5	2.7	2.35	3.2	3.0	2.1	2.0
27	1.4	2.0	2.5	2.6	.8	2.5	2.7	2.8	3.2	3.0	2.0	2.0
28	1.3	2.0	2.5	2.5	.8	1.4	1.9	3.0	3.2	3.0	1.1	2.0
29	.68	2.0	2.5	2.3	.85	2.35	1.0	2.8	3.2	3.0	2.2	2.0
30	.06	2.0	2.5	2.3	.....	2.6	2.2	2.8	3.2	3.05	1.9	1.05
31	.06	.....	2.5	2.3	.....	2.6	.....	2.8	.....	3.0	1.9	.....

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.									
1	.....	2.8	1.2	2.6	3.0	3.5	4.0	1.7	1.0
2	.....	.....	1.2	2.9	3.0	3.5	4.0	1.8	.95
3	.....	1.3	1.2	3.1	3.0	3.5	.....	1.8	.95
4	.....	2.0	1.2	3.2	3.0	3.5	2.5	1.6	.95
5	.....	2.1	1.2	3.3	3.0	3.5	3.5	1.65	.95
6	.....	2.0	1.25	3.3	3.0	3.5	4.0	1.65	.8
7	.....	1.95	1.25	3.3	3.0	3.6	4.0	1.4	.85
8	.....	2.45	1.25	3.2	3.0	3.6	4.0	1.55	.8
9	.....	2.8	1.25	3.2	3.0	3.6	4.5	1.55	.8
10	.....	3.0	1.25	3.1	3.0	3.6	4.5	1.4	.8
11	.....	3.0	1.25	3.2	3.0	2.5	4.5	1.5	.4
12	.....	3.1	.85	3.2	3.0	3.5	4.0	1.4	.....
13	.....	3.2	.5	3.2	3.0	2.75	4.0	1.4	.....
14	.....	3.3	.7	3.1	3.0	3.7	4.0	1.4	.....
15	.....	3.3	.7	3.0	3.0	3.7	4.0	1.3	.....
16	1.0	3.3	.7	3.0	3.0	3.7	4.0	1.3	.....
17	.9	3.3	.8	3.0	3.0	3.7	4.0	1.3	.....
18	.9	3.3	.8	3.0	3.0	3.75	4.0	1.3	.....
19	.9	3.3	.....	3.0	3.0	3.75	3.0	1.25	.....
20	.9	3.0	.....	3.0	3.2	3.75	3.0	1.0	.....
21	1.05	2.7	.....	3.0	3.2	3.8	2.9	1.1	.....
22	1.05	3.3	2.0	3.0	.....	3.9	2.9	1.15	.....
23	1.05	3.0	2.1	3.0	.....	3.9	2.5	1.15	.....
24	1.05	2.75	2.5	3.0	3.15	4.0	2.5	1.15	.....
25	1.05	2.75	2.5	3.0	3.3	1.75	2.75	1.15	.....
26	1.6	.....	2.8	3.0	3.35	1.55	2.7	1.15	.....
27	2.0	.....	.....	3.0	3.35	4.0	2.55	1.1	.....
28	2.05	.....	.....	3.0	3.5	4.0	2.4	.9	.....
29	2.05	.....	.....	3.0	3.5	4.0	2.55	.9	.....
30	2.35	.....	1.5	3.0	3.5	4.0	2.1	.9	.....
31	2.7	.....	2.0	.....	3.5	.....	2.1	1.0	.....

Daily gage height, in feet, of Modesto canal near Lagrange, Cal., for 1903–1912—Contd.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906.								1906.							
1	.....	.....	2.4	0.2	2.6	2.5	2.25	16	1.5	2.35	2.8	2.55	2.6	.....	1.35
2	.....	.....	2.5	.85	2.6	2.45	1.95	17	1.7	2.3	2.8	2.5	2.6	.....	1.3
3	.....	.....	2.6	1.1	2.6	2.45	1.8	18	1.8	2.3	2.8	2.5	2.5	.....	1.2
4	.....	.....	2.5	1.5	2.6	2.45	1.6	19	2.0	2.3	2.8	2.6	2.5	.....	1.15
5	.....	.....	2.65	1.9	2.55	2.45	1.65	20	.....	2.4	2.8	2.6	2.45	.....	1.05
6	.....	.....	2.8	2.2	2.6	2.5	1.6	21	.....	2.5	2.8	2.6	2.5	.....	1.05
7	.....	.....	2.8	2.6	2.55	2.5	1.55	22	.....	.....	2.8	2.6	2.5	.....	1.0
8	.....	.....	2.8	2.7	2.6	2.5	1.55	23	.....	.....	1.5	2.6	2.5	0.6	.95
9	.....	1.4	2.8	2.85	2.55	2.45	1.5	24	.....	.....	.....	2.6	2.5	.5	.95
10	.....	2.0	2.8	2.75	2.55	1.85	1.35	25	.....	.....	.....	2.6	2.5	1.3	.95
11	.....	2.0	2.8	2.5	2.6	.....	1.45	26	.....	.....	.....	2.55	2.45	1.9	1.0
12	.....	1.95	2.8	2.5	2.6	.....	1.45	27	.....	.....	.....	2.55	2.5	2.1	1.0
13	1.5	2.25	2.8	2.5	2.6	.....	1.4	28	.....	.....	.....	2.6	2.5	2.2	.95
14	.65	2.3	2.8	1.65	2.6	.....	1.25	29	.....	2.45	.....	2.6	2.5	1.95	.9
15	1.15	2.3	2.8	2.6	2.6	.....	1.35	30	.....	2.5	.....	2.65	2.5	1.95	.85
								31	.....	.....	.....	.....	2.5	1.9	.....

Day.	Oct.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.										
1	0.85	.....	1.3	.....	0.95	2.2	2.65	2.7	2.75	1.65
2	.85	.....	1.3	0.8	.95	2.45	2.65	2.65	2.75	1.6
3	.85	.....	1.0	1.15	1.5	2.6	2.65	2.7	2.75	1.55
4	.85	.....	1.0	1.4	1.5	2.4	2.65	2.75	2.75	1.4
5	.85	.....	1.0	1.4	1.5	2.2	2.65	2.75	2.75	1.4
6	.85	.....	.4	.65	1.5	2.1	2.6	2.7	.5	1.6
7	.85	.....	1.5	1.6	1.5	2.1	2.65	2.75	.45	1.6
8	.8	.....	1.7	2.05	1.5	2.1	2.7	2.75	1.2	1.55
9	.9	.....	1.9	1.7	1.5	2.2	2.7	2.75	1.2	1.4
10	.95	.....	2.2	1.1	1.5	2.3	2.7	2.75	.6	1.4
11	.85	.....	2.1	.85	1.5	2.4	2.65	2.75	.6	1.4
12	.85	.....	2.15	.....	1.55	2.45	2.6	2.75	.6	1.4
13	.9	.....	2.4	.9	1.4	1.25	2.65	2.75	.6	1.4
14	1.1	.....	1.6	.9	1.4	.85	2.65	2.75	.6	1.4
15	1.05	0.05	.75	1.45	1.4	2.0	2.7	2.75	1.0	1.35
16	1.0	.05	.5	1.15	1.4	2.2	2.7	2.75	1.0	1.3
17	1.0	.05	1.0	1.1	2.0	2.3	2.7	2.75	1.5	1.25
18	.95	1.0	1.1	.5	2.4	2.4	2.6	2.75	2.0	1.2
19	.95	1.0	1.75	.4	2.5	2.4	2.5	2.75	2.35	1.1
20	.95	1.05	1.75	.4	2.6	2.4	2.3	2.75	2.75	1.1
21	.....	1.05	1.75	.2	2.4	2.4	2.3	2.75	2.8	1.05
22	.....	.....	1.0	.....	1.1	1.2	2.3	2.6	2.85	1.0
23	.....	1.0	.95	.....	1.5	1.1	2.3	2.5	2.85	.95
24	.....	1.0	.9	.....	1.1	2.4	2.3	2.65	2.8	.95
25	.....	1.0	.9	.....	2.2	2.5	2.4	2.65	2.7	.95
26	.....	1.05	.....	.....	2.3	2.55	2.6	2.65	2.8	.9
27	.....	1.0	.....	.....	2.25	2.55	2.65	2.65	2.5	.9
28	.....	1.0	.....	.....	2.3	2.6	2.7	2.7	1.9	.9
29	.....	1.0	.....	.....	2.5	2.65	2.7	2.75	1.7	.85
30	.....	1.0	.....	.....	2.35	2 0	2.7	2.75	1.75	.9
31	.....	1.0	.....	.....	.....	2.65	.....	2.75	1.65	.....

Day.	Oct.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907–8.											
1	0.6	.....	0.75	0.8	1.8	2.6	2.95	3.0	1.55	1.6	0.4
2	.....	.....	.8	.8	1.8	2.6	2.9	3.1	2.3	1.7	.4
3	.....	.....	.8	.8	1.8	2.7	2.75	3.1	3.0	1.8	.4
4	.....	.....	.8	1.0	1.9	2.8	2.7	3.1	2.7	1.8	.4
5	.....	.....	.8	1.0	2.0	2.8	2.8	3.1	3.1	1.6	.35
6	.....	.....	.8	1.5	2.1	2.45	2.4	3.05	3.1	1.5	.35
7	.....	.....	.8	1.5	2.1	.45	2.95	3.1	3.1	1.4	.35
8	.....	.....	.8	1.6	2.05	.6	3.0	3.1	3.1	1.3	.....
9	.....	.....	.3	1.4	2.05	.55	3.0	2.95	3.1	1.2	.....
10	.....	.....	.2	.8	2.05	1.1	3.0	3.05	2.95	1.15	.....

Daily gage height, in feet, of Modesto canal near Lagrange, Cal., for 1903–1912—Contd.

Day.	Oct.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907–8.											
11			0.9	1.35	2.1	1.8	2.05	3.05	2.5	1.1	
12			1.0	1.6	2.1	2.1	1.45	3.05	2.3	1.05	
13			1.3	1.6	2.1	2.3	1.4	3.0	2.5	1.0	
14			1.2	1.6	2.1	1.2	1.45	3.1	2.4	.95	
15				1.6	2.1	2.25	.7	3.05	2.0	.9	
16				1.6	2.1	2.5	1.7	2.9	1.8	.8	
17				1.4	2.15	2.6	2.5	3.1	1.65	.75	
18				1.25	2.15	2.7	2.75	3.05	1.55	.75	
19				1.25	2.15	2.8	2.8	3.1	1.5	.75	
20				1.4	2.1	2.8	2.9	3.05	1.5	.7	
21				1.4	2.1	2.5	3.0	3.1	1.5	.7	
22				1.4	2.2	2.85	3.0	3.1	1.5	.65	
23				1.4	2.3	2.85	3.0	3.1	1.5	.65	
24				1.4	2.3	2.9	3.0	1.7	1.5	.65	
25				1.6	2.4	2.85	3.0	2.7	1.5	.65	
26				1.6	2.4	3.0	2.6	3.1	1.4	.6	
27		0.8		1.65	2.35	3.0	3.05	3.1	1.35	.55	
28		.85	.35	1.65	2.45	3.0	3.05	3.1	1.5	.55	
29		.85		1.7	2.5	3.0	3.05	3.1	1.6	.5	
30		.75			2.5	3.0	3.1	3.1	1.5	.45	
31		.8			2.6		3.0		1.7	.45	

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908–9.										
1		1.5	1.8	1.7	1.3	3.0	3.2	3.25	1.95	0.9
2		1.5	1.8	1.8	2.0	3.0	3.2	3.25	1.9	1.0
3		1.5	1.5	2.0	2.2	3.05	3.2	3.15	1.8	1.05
4		1.5	1.85	2.8	2.4	3.05	2.8	3.2	1.8	.95
5		1.5	2.0	2.4	2.55	3.1	2.85	3.2	1.6	.9
6		1.6	2.0	2.3	2.65	3.1	3.2	3.2	1.65	.8
7		1.5		2.3	2.7	3.0	3.25	3.25	1.5	.8
8		1.5		2.35	2.7	3.2	3.3	3.25	1.5	.9
9		1.6		2.25	2.7	3.15	3.3	3.3	1.6	.85
10		1.7		2.0	2.9	3.15	3.3	3.25	1.55	.8
11		1.75		2.1	3.0	3.05	3.3	3.25	1.6	.75
12		1.75		2.5	3.0	3.15	3.3	3.25	1.5	.7
13		1.4			3.0	2.9	3.3	3.25	1.4	.7
14		1.4			3.0	1.0	3.3	3.2	1.35	.65
15		1.4			3.0	2.5	3.3	3.25	1.3	.6
16		1.3			3.0	3.1	3.3	3.25	1.2	.6
17		1.3			3.05	3.15	3.3	3.3	1.2	.5
18		1.5			3.05	3.2	3.0	3.3	1.1	.3
19		1.7			3.0	3.1	3.3	3.3	1.1	.3
20		1.3			3.0	3.15	3.3	3.3	1.1	.3
21		1.2			2.75	3.15	3.3	3.35	1.2	.3
22		1.1			2.25	3.15	3.3	3.35	1.1	.3
23		1.0	1.4		2.8	3.2	3.3	3.3	1.15	.25
24		1.0	1.4		3.0	3.2	3.25	3.3	1.2	.25
25		1.1	1.5	.85	3.1	3.2	3.25	3.25	1.15	.25
26	0.8	1.3	1.6	1.25	3.0	3.2	3.2	3.3	1.1	.3
27	1.0	1.65	1.7	.7	3.05	3.15	3.3	3.25	.95	.3
28	1.0	1.75	1.75	1.25	3.0	3.15	1.85	3.25	.8	.3
29	1.15	1.75		1.3	2.05	3.2	3.2	2.1	.8	.3
30	1.4	1.75		1.3	3.0	3.2	1.8	2.05	.8	.3
31	1.5	1.75		1.3		3.15		2.05	.85	

Day.	Oct.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.									
1	0.35		2.75		3.12	3.22	3.35	1.0	0.35
2	.4		2.7		3.11	3.2	3.15	1.0	.35
3	.6	1.0	1.9		3.25	3.22	2.9	1.0	
4	.6	1.45			3.18	3.22	2.55	.9	.2
5	.3	1.75	2.15	1.0	3.18	3.24	2.45	.8	.25
6	.3	1.75	.7	1.25	3.2	3.24	1.8	.7	.1
7	.3	1.75		1.6	3.19	3.22	1.85	.7	.2
8	.3	2.0	2.3	2.0	3.2	3.21	1.9	.65	.35
9	.3	2.0	1.3	2.6	3.11	3.22	1.95	.65	
10	.3	2.0	2.75	2.6	3.2	3.2	2.0	.3	

Daily gage height, in feet, of Modesto canal near Lagrange, Cal., for 1903–1912—Contd.

Day.	Oct.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.									
11	0.25	1.85	2.75	2.6	3.2	3.23	1.95	.....	.....
12	.....	.....	2.75	2.55	3.2	3.22	1.95	0.5	.....
13	.....	.....	2.75	2.6	3.2	3.21	1.8	.5	0.1
14	.....	.....	2.75	2.6	3.2	3.23	1.7	.5	.1
15	.....	2.0	2.75	2.62	3.2	3.24	1.6	.45	.15
16	.....	2.3	2.75	2.66	3.2	3.3	1.55	.45	.75
17	.....	2.45	2.75	2.7	3.2	3.3	1.45	.4	.75
18	.....	2.6	2.9	2.75	3.28	3.31	1.4	.4	1.05
19	.....	2.65	2.9	2.95	3.22	3.3	2.15	.4	1.5
20	.....	2.65	[a] 3.25	2.98	3.2	3.32	2.2	.4	1.2
21	.....	2.7	3.2	3.02	3.2	3.31	2.3	.4	.9
22	.....	2.65	3.2	2.98	3.18	3.31	1.8	.6	.75
23	.....	2.6	[a] 3.45	3.10	3.22	3.31	1.6	.5	.7
24	.....	2.6	2.9	3.05	3.22	3.3	1.45	.45	.65
25	.....	2.6	2.5	3.15	3.2	3.31	1.35	.4	.5
26	.....	2.7	2.2	2.98	3.21	3.31	1.25	.45	.45
27	.....	2.7	1.5	3.00	3.23	3.31	1.2	.45	.45
28	.....	1.35	.....	3.05	3.21	3.3	1.2	.45	.45
29	.....	.....	.....	3.15	3.22	3.31	1.15	.45	.....
30	.....	.....	.....	3.12	3.2	3.34	1.1	.45	.....
31	.....	.....	.....	.....	3.22	.....	1.05	.45	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	.....	.....	.....	.....	.....	2.01	2.79	3.40	3.48	3.50	3.58	1.19
2	.....	.....	.....	.....	.....	1.20	2.79	3.38	3.50	3.58	3.60	1.15
3	.....	.....	.....	.....	.....	1.22	2.81	3.35	3.46	3.52	3.58	1.06
4	.....	.....	.....	.....	.....	1.30	2.75	3.40	3.51	3.58	3.56	1.02
5	.....	.....	.....	.....	.....	1.28	2.70	3.40	3.46	3.59	3.58	1.10
6	.....	.....	.....	.....	.....	1.25	.....	3.38	3.45	3.58	3.60	.90
7	.....	.....	.....	.....	.....	.....	2.78	3.40	3.46	3.52	3.46	.84
8	0.8	.....	.....	.....	.....	.....	3.08	3.38	3.45	3.52	3.14	.90
9	.8	.....	.....	.....	.....	.....	3.15	3.41	3.48	3.62	2.91	.80
10	.65	.....	.....	.....	.....	1.70	3.10	3.38	3.48	3.58	2.72	.80
11	.8	.....	.....	.....	.....	1.52	3.04	3.43	3.50	3.56	2.45	.85
12	.9	.....	.....	.....	.....	1.52	3.15	3.35	3.48	3.56	2.30	.61
13	1.4	.....	.....	.....	.....	1.55	3.08	3.40	3.48	3.58	2.20	.62
14	1.5	.....	.....	.....	.....	1.65	3.29	3.41	3.46	3.58	2.10	.75
15	1.6	.....	.....	.....	.....	1.75	3.25	3.39	3.48	3.58	2.00	.55
16	1.6	.....	.....	.....	.....	2.25	3.15	3.41	3.48	3.55	1.85	.60
17	.....	.....	.....	.....	.....	2.44	3.22	3.42	3.46	3.58	1.88	.57
18	.....	.....	.....	.....	.....	2.50	3.28	3.43	3.52	3.54	1.75	.60
19	.....	.....	.....	.....	.....	2.50	3.22	3.46	3.48	3.54	1.70	.55
20	.....	.....	.....	.....	.....	2.50	3.22	3.42	3.46	3.55	1.62	.55
21	.....	.....	.....	.....	.....	2.50	3.25	3.42	3.48	3.54	1.60	.52
22	.....	.....	.....	.....	.....	2.25	3.34	3.45	3.48	3.56	1.55	.62
23	.....	.....	.....	.....	.....	2.60	3.30	3.48	3.46	3.59	1.45	.50
24	.....	.....	.....	.....	1.78	2.68	3.31	3.42	3.48	3.55	1.40	.62
25	.....	.....	.....	.....	1.98	2.70	3.32	3.40	3.53	3.54	1.32	.60
26	.....	.....	.....	.....	1.98	2.70	3.29	3.40	3.52	3.55	1.31	.....
27	.....	.....	.....	.....	2.00	2.70	3.30	3.42	3.51	3.58	1.29	.75
28	.....	.....	.....	.....	1.98	2.70	3.34	3.50	3.49	3.58	1.25	.65
29	.....	.....	.....	.....	.....	2.70	3.35	3.46	3.50	.....	1.22	.65
30	.....	.....	.....	.....	.....	2.74	3.40	3.45	3.52	.....	1.20	.65
31	.....	.....	.....	.....	.....	2.75	.....	3.46	.....	3.28	1.20	.....

[a] Gage heights estimated.

Daily gage height, in feet, of Modesto canal near Lagrange, Cal., for 1903–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	0.61	0.40	.....	.....	.....	.....	2.2	4.0	4.2
2	.70	.30	.....	.....	.....	.....	2.7	4.0	4.2
3	.....	.30	.....	.....	.....	.....	3.6	4.0	4.2
4	.68	.30	.....	.....	.....	1.02	3.8	4.0	4.2
5	.70	.30	.....	.....	.....	1.65	3.8	4.0	4.2
6	.60	.30	.....	.....	.....	3.2	3.7	4.0	4.2
7	.58	.30	.....	.....	.....	3.4	3.7	4.0	4.2
8	.55	.30	.....	.....	.....	3.3	3.8	4.0	4.2
9	.....	.30	.....	.....	1.65	2.6	3.8	4.1	4.2
10	.....	.30	.....	.....	1.75	1.9	3.7	.....	4.2
11	.50	.30	.....	.....	1.7	2.0	3.8	3.9	4.5
12	.40	.20	.....	.....	1.35	2.1	3.8	4.1	4.2
13	.40	.20	.....	.....	1.15	3.5	3.8	4.0	4.2
14	.40	.20	.....	.....	1.05	3.1	3.7	4.1	4.2
15	.40	.20	.....	.....	.85	2.3	3.7	4.1	4.2
16	.20	.20	.....	.....	1.20	3.5	.....	4.1	4.2
17	.30	.20	.....	.....	1.20	2.5	.....	4.1	4.2
18	.30	.20	.....	.....	1.20	2.2	.....	4.1	3.4
19	.25	.20	.....	.....	1.25	2.2	3.6	4.1	4.3
20	.40	.20	.....	.....	1.30	2.3	3.6	4.1	4.3
21	.30	.20	.....	.....	1.30	2.4	2.5	4.1	4.3
22	.....	.20	.....	.....	1.20	2.0	2.4	4.1	4.3
23	.50	.20	.....	.....	1.20	1.9	2.4	4.1	.....
24	.40	.20	.....	.....	1.15	2.0	2.5	4.1	.....
25	.40	.20	.....	.....	1.10	2.6	.....	4.1	2.0
26	.40	.20	.....	.....	1.02	2.4	3.6	4.2	2.0
27	.40	.....	.....	.....	.97	2.3	3.8	4.2	2.0
28	.40	.....	.....	.....	.97	2.2	3.8	4.2	2.0
29	.30	.....	.....	.....	.....	2.7	3.9	4.2	2.0
30	.30	.....	.....	.....	.....	3.0	3.9	4.1	2.0
31	.40	.....	.....	.....	.....	2.3	.....	4.2	.....

NOTE.—Canal was dry on days when gage was not read except Apr. 22–28, 1906, Sept. 9–12, 1910, Feb. 23, Mar. 7, 9, July 29, Sept. 26, and Oct. 4, 9, 10, 1911, and Feb. 29–Mar. 3, and June 23–24, 1912, on which days the discharge was estimated or interpolated.

Rating tables for Modesto canal near Lagrange, Cal.

Jan. 1, 1903, to July 12, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
0.00	0	0.70	14	1.40	54	2.10	127
.10	1	.80	17	1.50	63	2.20	139
.20	2.5	.90	20	1.60	72	2.30	152
.30	4	1.00	24	1.70	82	2.40	165
.40	6	1.10	30	1.80	93	2.50	178
.50	8	1.20	38	1.90	104	2.60	191
.60	11	1.30	46	2.00	115		

July 13, 1904, to Dec. 31, 1905.[a]

0.10	2	1.10	53	2.00	130	2.90	220
.20	4	1.20	61	2.10	140	3.00	230
.30	7	1.30	69	2.20	150	3.20	252
.40	11	1.40	77	2.30	160	3.40	274
.50	16	1.50	85	2.40	170	3.60	296
.60	21	1.60	94	2.50	180	3.80	318
.70	26	1.70	103	2.60	190	4.00	340
.80	32	1.80	112	2.70	200	4.20	364
.90	38	1.90	121	2.80	210	4.40	388
1.00	45						

[a] This table is based on discharge measurements made during 1904–1905. It is well defined between gage heights 0.5 foot and 4 feet.

Rating tables for Modesto canal near Lagrange, Cal.—Continued.

Jan. 1 to Dec. 31, 1906.[a]

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
0.50	90	1.20	169	1.90	268	2.50	360
.60	100	1.30	182	2.00	283	2.60	377
.70	110	1.40	196	2.10	298	2.70	394
.80	120	1.50	210	2.20	313	2.80	411
.90	131	1.60	224	2.30	328	2.90	428
1.00	143	1.70	238	2.40	344	3.00	445
1.10	156	1.80	253				

Jan. 1 to Dec. 31, 1907.[b]

0.20	2	1.00	117	1.80	280	2.50	450
.30	13	1.10	135	1.90	303	2.60	475
.40	25	1.20	154	2.00	327	2.70	501
.50	38	1.30	174	2.10	351	2.80	527
.60	52	1.40	194	2.20	375	2.90	553
.70	67	1.50	215	2.30	400	3.00	580
.80	83	1.60	236	2.40	425		
.90	100	1.70	258				

Jan. 1 to Dec. 31, 1908.[c]

0.00	0	0.90	136	1.80	309	2.60	477
.10	13	1.00	154	1.90	330	2.70	499
.20	26	1.10	172	2.00	351	2.80	521
.30	40	1.20	191	2.10	372	2.90	543
.40	55	1.30	210	2.20	393	3.00	565
.50	70	1.40	229	2.30	414	3.10	587
.60	86	1.50	248	2.40	435	3.20	609
.70	102	1.60	268	2.50	456		
.80	119	1.70	288				

[a] This table is based on 11 discharge measurements made during 1906, and is well defined between gage heights 1.7 feet and 2.8 feet.

[b] This table is not applicable for obstructed-channel conditions. It is based on seven discharge measurements made during 1907 and is well defined.

[c] This table is not applicable for obstructed-channel conditions. It is based on four discharge measurements made during 1908 and is well defined.

Daily discharge, in second-feet, of Modesto canal near Lagrange, Cal., for 1909–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	194	254	234	155	494	534	544	284	84
2	194	254	254	294	494	534	544	274	100
3	194	194	294	334	504	534	524	254	108
4	194	264	454	374	504	454	534	254	92
5	194	294	374	404	514	464	534	214	84
6	214	294	354	424	514	534	534	224	69
7	194	294	354	434	494	544	544	194	69
8	194	0	364	434	534	554	544	194	84
9	214	0	344	434	524	554	554	214	76
10	234	0	294	474	524	554	544	204	69
11	244	0	314	494	504	554	544	214	62
12	244	0	394	404	524	554	544	194	55
13	174	0	0	494	474	554	544	174	55
14	174	0	0	494	100	554	534	164	49
15	174	0	0	494	394	554	544	155	43
16	155	0	0	494	514	554	544	136	43
17	155	0	0	504	524	554	554	136	32
18	194	0	0	504	534	494	554	117	14
19	234	0	0	494	514	554	554	117	14
20	155	0	0	494	524	554	554	117	14

Daily discharge, in second-feet, of Modesto canal near Lagrange, Cal., for 1909–1912—Con.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
21	136	0	0	444	524	554	564	136	14
22	117	0	0	344	524	554	564	117	14
23	100	174	0	454	534	554	554	126	10
24	100	174	0	494	534	544	554	136	10
25	117	194	76	514	534	544	544	126	10
26	155	214	146	494	534	534	554	117	14
27	224	234	55	504	524	554	544	92	14
28	244	244	146	494	524	264	544	69	14
29	241	.....	155	504	534	534	314	69	14
30	244	.....	155	494	534	254	304	69	14
31	244	.....	155	.....	524	.....	304	76	.....

Day.	Oct.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.									
1	18	0	444	0	518	538	564	100	18
2	22	0	434	0	516	534	524	100	18
3	43	100	274	0	544	538	474	100	0
4	43	184	0	0	530	538	404	84	7
5	14	244	324	100	530	542	384	69	10
6	14	244	55	146	534	542	254	55	2
7	14	244	0	214	532	538	264	55	7
8	14	294	354	294	534	536	274	49	18
9	14	294	155	414	516	538	284	49	14
10	14	294	444	414	534	534	294	14	11
11	10	264	444	414	534	540	284	0	8
12	.....	0	444	404	534	538	284	32	5
13	.....	0	444	414	534	536	254	32	2
14	.....	0	444	414	534	540	234	32	2
15	.....	294	444	418	534	542	214	27	4
16	.....	354	444	426	534	554	204	27	62
17	.....	384	444	434	534	554	184	22	62
18	.....	414	474	444	550	556	170	22	108
19	.....	424	474	484	538	554	324	22	194
20	.....	424	544	490	534	558	334	22	136
21	.....	434	534	498	534	556	354	22	84
22	.....	424	534	490	530	556	254	43	62
23	.....	414	584	514	538	556	214	32	55
24	.....	414	474	504	538	554	184	27	49
25	.....	414	394	524	534	556	164	22	32
26	.....	434	334	490	536	556	146	27	27
27	.....	434	194	494	540	556	136	27	27
28	.....	164	0	504	536	554	136	27	27
29	.....	.....	0	524	538	556	126	27	0
30	.....	.....	0	518	534	562	117	27	0
31	.....	.....	0	.....	538	.....	108	27	.....
1910–11.									
1	.....	.....	296	452	574	590	594	610	134
2	.....	.....	136	452	570	594	610	614	126
3	.....	.....	140	456	564	586	598	610	110
4	.....	.....	155	444	574	596	610	606	103
5	.....	.....	151	434	574	586	612	610	117
6	.....	.....	146	220	570	584	610	614	84
7	.....	.....	70	450	574	586	598	586	75
8	69	.....	0	510	570	584	598	522	84
9	69	.....	120	524	576	590	618	476	69
10	49	.....	234	514	570	590	610	438	69
11	69	.....	198	502	580	594	606	384	76
12	84	.....	198	524	564	590	606	354	44
13	174	.....	204	510	574	590	610	334	45
14	194	.....	224	*552	576	586	610	314	62
15	219	.....	244	544	572	590	610	294	38
16	214	.....	344	524	576	590	604	264	48
17	.....	.....	382	538	578	586	610	270	48
18	.....	.....	394	550	580	598	602	244	43
19	.....	.....	394	538	586	590	602	234	33
20	.....	.....	394	538	578	586	604	218	30

Daily discharge, in second-feet, of Modesto canal near Lagrange, Cal., for 1909–1912—Con.

Day.	Oct.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.									
21	.....	.....	394	544	578	590	602	214	34
22	.....	.....	344	562	584	590	606	204	45
23	.....	120	414	554	590	586	612	184	32
24	.....	250	430	556	578	590	604	174	45
25	.....	290	434	558	574	600	602	159	43
26	.....	290	434	552	574	598	604	157	52
27	.....	294	434	554	578	596	610	153	62
28	.....	290	434	562	594	592	610	146	49
29	.....	.....	434	564	586	594	300	140	49
30	.....	.....	442	574	584	598	0	136	49
31	.....	.....	444	.....	586	.....	550	136	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	44	22	.....	.....	.....	100	320	680	720
2	55	14	.....	.....	.....	100	420	680	720
3	54	14	.....	.....	.....	100	600	680	720
4	53	14	.....	.....	.....	94	640	680	720
5	55	14	.....	.....	.....	212	640	680	720
6	43	14	.....	.....	.....	520	620	680	720
7	41	14	.....	.....	.....	560	620	680	720
8	38	14	.....	.....	.....	540	640	680	720
9	36	14	.....	.....	212	400	640	700	720
10	34	14	.....	.....	230	260	620	0	720
11	32	14	.....	.....	220	280	640	660	780
12	22	7	.....	.....	154	300	640	700	720
13	22	7	.....	.....	117	580	640	680	720
14	22	7	.....	.....	99	500	620	700	720
15	22	7	.....	.....	64	340	620	700	720
16	7	7	.....	.....	126	580	0	700	720
17	14	7	.....	.....	126	380	0	700	720
18	14	7	.....	.....	126	320	0	700	560
19	10	7	.....	.....	136	320	600	700	740
20	22	7	.....	.....	145	340	600	700	740
21	14	7	.....	.....	145	360	380	700	740
22	0	7	.....	.....	126	280	360	700	740
23	32	7	.....	.....	126	260	360	700	416
24	22	7	.....	.....	117	280	380	700	58
25	22	7	.....	.....	108	400	0	700	280
26	22	7	.....	.....	94	360	600	720	280
27	22	.....	.....	.....	85	340	640	720	280
28	22	.....	.....	.....	85	320	640	720	280
29	14	.....	.....	.....	100	420	660	720	280
30	14	.....	.....	.....	.....	480	660	700	0
31	22	.....	.....	.....	.....	340	.....	720	.....

NOTE.—Daily discharge 1909–1911 determined from a well-defined curve. Discharge 1912 is determined from a curve not well defined and may be subject to revision in a later report. Canal was dry on days for which no discharge is given.

Monthly discharge of Modesto canal near Lagrange, Cal., for 1907–1912.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1907.					
January	126	0	49.9	3,070	
February	425	0	173	9,610	
March	339	0	80.8	4,970	
April	475	108	272	16,200	
May	488	135	377	23,200	
June	501	400	472	28,100	
July	514	475	505	31,100	
August	540	52	310	19,100	
September	247	91	165	9,820	
The period	.....	.....	.....	145,000	

Monthly discharge of Modesto canal near Lagrange, Cal., for 1907–1912—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1907–8.					
October	52	0	1.68	103	
November	0	0	.00	0	
December	91	0	13.6	836	
January	210	0	56.4	3,470	
February	288	119	224	12,900	
March	477	309	384	23,600	
April	565	62	431	25,600	
May	587	102	483	29,700	
June	587	288	568	33,800	
July	587	219	368	22,600	
August	309	62	153	9,410	
September	55	0	12.1	720	
The year	587	0	225	163,000	
1908–9.					
October	0	0	.0	0	
November	0	0	.0	0	
December	248	0	35.0	2,150	
January	244	100	189	11,600	A.
February	294	0	110	6,110	B.
March	454	0	159	9,780	A.
April	514	155	449	26,700	A.
May	534	100	501	30,800	A.
June	554	254	521	31,000	A.
July	564	304	523	32,200	A.
August	284	69	160	9,840	A.
September	108	10	44.8	2,670	B.
The year	564	0	224	163,000	
1909–10.					
October	43	0	7.1	437	B.
November	0	0	0	0	
December	0	0	0	0	
January	0	0	0	0	
February	434	0	271	15,100	A.
March	584	0	327	20,100	A.
April	524	0	366	21,800	A.
May	550	516	534	32,800	A.
June	562	534	547	32,500	A.
July	564	108	263	16,200	A.
August	100	0	39.4	2,420	A.
September	194	0	35.0	2,080	B.
The year	564	0	199	143,000	
1910–11.					
October	214	0	36.6	2,250	C.
November	0	0	.0	0	
December	0	0	.0	0	
January	0	0	.0	0	A.
February	294	0	54.8	3,040	A.
March	444	0	292	18,000	A.
April	574	220	512	30,500	A.
May	594	564	577	35,500	A.
June	600	584	591	35,200	A.
July	618	0	575	35,400	A.
August	614	136	335	20,600	A.
September	134	32	63.3	3,770	A.
The year	618	0	253	184,000	
1911–12.					
October	55	0	27.3	1,680	B.
November	22	0	8.9	530	C.
December	0	0	.0	0	
January	0	0	.0	0	
February	230	0	94.5	5,440	
March	580	94	344	21,200	
April	660	0	493	29,300	
May	720	0	674	41,400	
June	780	0	590	35,100	
The period				135,000	

NOTE.—No accuracy values are given for 1912 as the curve is not well defined and may be subject to revision in a later report.

TURLOCK CANAL NEAR LAGRANGE, CAL.

The Turlock canal, which is owned by the Turlock irrigation district, diverts water through a short tunnel from the left bank of Tuolumne River, 2 miles northeast of Lagrange. The head gates are only a few feet above Lagrange dam. The diverted water is used for irrigating 176,000 acres of fertile land in the vicinity of Turlock and Ceres in Stanislaus County. The district has filed on 1,500 second-feet, but the maximum capacity of the canal at present is somewhat less than 1,000 second-feet.

The first water was turned into the canal in small quantities in 1898 and was used for puddling. A record of the gage height has been kept from July, 1899, to the present time. The gage is a staff float in a concrete well 190 feet below the intrap and below the spillway. The gage is located at the head of the canal of the Turlock irrigation district, in the SW. ¼ sec. 16, T. 3 S., R. 14 E. Measurements are made at a footbridge at Morgan flume about half a mile below the gage well.

The records for this station are considered good.

After June 30, 1911, gage height record has been furnished by the Turlock irrigation district through Burton Smith, chief engineer.

Discharge measurements of Turlock canal near Lagrange, Cal., in 1897–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1897.		*Feet.*	*Sec.-feet.*
Sept. 7	A. Q. Campbell		43
1898.			
Oct. 7	J. B. Lippencott		30
1899.			
Apr. 21	S. G. Bennett		10
May 20	do		61
June 6	do		10
29	do	0.75	18
Aug. 4	do	1.7	85
Sept. 9	do	1.0	29
1900.			
Apr. 6	S. G. Bennett	2.0	129
June 22	do	.50	9.5
Aug. 11	do	1.90	117
Sept. 8	do	1.15	35
1901.			
Aug. 31	S. G. Bennett	0.0	0.0
1902.			
May 13	S. G. Bennett	2.92	253
July 23	do	3.0	260
Aug. 27	L. M. Lawson	2.6	105
1903.			
Feb. 9	S. G. Bennett	2.42	206
Apr. 8	do	2.33	176
8	do	1.58	93
8	do	1.00	37
8	do	3.00	286
9	do	3.10	276
June 16	do	4.10	383
Sept. 23	do	1.25	33
1904.		*Feet.*	*Sec.-ft.*
Jan. 21	F. W. Huber	1.30	49
May 8	S. G. Bennett	4.78	455
8	do	3.70	291
8	do	2.60	153
8	do	1.98	80
9	do	1.70	54
June 8	O. W. Peterson	5.08	496
Aug. 22	do	3.90	338
1905.			
Apr. 8	O. W. Peterson	1.22	47
8	do	2.05	128
8	do	2.80	210
8	do	4.15	375
May 24	R. S. Hawley	5.30	514
June 17	do	5.55	576
July 21	do	4.65	432
Sept. 14	C. H. Lee	2.04	86
1906.			
May 16	C. H. Lee	5.55	573
24	W. C. Sawyer	5.75	601
29	do	1.30	46
29	do	2.05	109
29	do	2.97	214
29	do	2.97	218
29	do	3.75	295
29	do	4.70	430
30	do	5.35	523
30	do	6.02	627
June 7	do	5.50	551
July 2	do	6.02	624
19	do	5.02	469
21	do	1.08	30
Aug. 6	Sawyer and Martin	6.10	660
20	W. F. Martin	6.10	696

Discharge measurements of Turlock canal near Lagrange, Cal., in 1897–1912—Continued.

Date.	Hydrographer.	Gage height.	Discharge.
1906.		*Feet.*	*Sec.-feet.*
Sept. 5	W. F. Martin	4.46	423
1907.			
May 28	W. F. Martin	5.25	711
May 29	do	4.50	565
29	do	3.98	477
29	do	3.50	405
29	do	2.92	318
29	do	2.30	231
29	do	1.75	153
29	do	.95	64
1908.			
May 1	W. A. Lamb	5.4	716
June 16	W. F. Martin	5.69	748
Sept. 11	W. V. Hardy	1.47	108
1909.			
June 2	W. F. Martin	1.00	89
2	do	2.47	257
2	do	4.10	488
2	do	4.52	575
1909.			
Aug. 4	W. F. Martin	4.66	596
1910.			
Apr. 1	J. E. Stewart	[a] 4.00	535
June 28	do	5.48	811
28	do	5.62	862
29	do	2.48	271
29	do	3.65	473
29	do	4.54	631
1911.			
May 13	J. E. Stewart	6.22	1,010
July 26	do	6.19	1,010
26	do	4.30	621
26	do	2.99	379
1912.			
Apr. 13	J. E. Stewart	4.52	642
13	do	4.52	658
May 29	do	6.56	1,020
29	do	6.53	995
July 13	do	5.02	703

[a] Gage at measuring section read 4.72 feet.

Daily gage height, in feet, of Turlock canal near Lagrange, Cal., for 1901–1912.

Day.	Apr.	May.	June.	July.	Aug.	Day.	Apr.	May.	June.	July.	Aug.
1901.						1901.					
1	.....	2.3	2.3	2.9	3.0	16	2.3	2.3	2.8	.....	.....
2	.....	2.2	2.2	3.0	3.0	17	2.25	2.3	2.9	.....	.....
3	.....	2.3	2.0	3.0	3.0	18	2.3	2.3	2.9	.....	.....
4	.....	2.3	2.2	3.0	.....	19	2.3	2.3	2.9	.....	.....
5	.....	2.2	2.2	3.0	.....	20	2.4	2.3	2.9	.....	.....
6	.....	2.2	2.25	3.0	.....	21	2.45	2.3	2.9	3.0	.....
7	.....	2.2	2.25	3.0	.....	22	2.5	2.3	2.9	3.0	.....
8	.....	2.2	2.25	3.0	.....	23	2.4	2.3	2.9	3.0	.....
9	.....	2.2	2.8	3.0	.....	24	2.65	2.3	.....	3.0	.....
10	2.5	2.2	2.8	3.0	.....	25	2.65	2.3	.....	3.0	.....
11	2.3	2.2	2.8	3.0	.....	26	1.6	2.3	.....	3.0	.....
12	2.3	1.0	1.4	3.0	.....	27	2.1	2.25	.....	3.0	.....
13	2.1	2.2	2.6	3.0	.....	28	2.6	2.25	2.2	3.0	.....
14	2.5	2.2	2.8	.....	.....	29	2.7	2.25	2.9	3.0	.....
15	2.5	2.3	2.8	.....	.....	30	2.7	2.3	.....	3.0	.....
						31	.....	2.3	.....	3.0	.....

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1902.								1902.							
1	.....	3.1	.....	3.7	3.8	3.9	1.3	16	2.8	3.2	3.0	3.7	4.0	3.8	.....
2	.....	3.1	.....	3.7	3.8	3.9	.....	17	.....	3.2	3.6	3.7	3.2	3.8	.....
3	.....	3.1	3.0	3.7	3.8	3.7	.....	18	3.0	2.5	3.6	3.7	2.7	4.0	.....
4	.....	3.1	3.0	3.7	3.8	3.7	.....	19	3.1	2.5	3.6	3.7	3.6	3.9	.....
5	.....	3.1	3.4	3.7	3.8	3.7	.....	20	3.1	2.4	3.6	3.7	3.6	3.9	.....
6	.....	3.1	3.5	3.7	3.8	3.8	.....	21	3.1	3.4	3.6	3.7	3.6	3.7	.....
7	2.3	3.2	3.5	3.7	3.9	3.9	.....	22	3.1	3.4	3.6	3.8	3.6	3.6	.....
8	2.0	3.2	3.5	3.7	4.0	3.9	.....	23	3.1	3.4	3.6	3.8	3.6	3.4	.....
9	.....	3.2	3.5	3.7	4.0	3.9	.....	24	3.1	3.4	3.6	3.8	3.6	3.5	.....
10	.....	3.2	3.5	3.7	4.0	3.9	.....	25	3.1	3.5	3.6	3.8	3.6	3.5	.....
11	2.4	3.2	3.5	3.7	4.0	4.0	.....	26	3.1	3.5	3.6	3.8	3.6	2.8	.....
12	2.6	3.2	3.5	3.7	4.0	4.0	.....	27	3.1	3.5	3.3	3.8	3.6	2.8	.....
13	2.6	3.2	3.0	3.7	4.0	4.0	.....	28	.....	.....	2.9	3.8	3.6	2.7	.....
14	2.0	3.2	3.0	3.7	4.0	3.8	.....	29	.....	.....	3.6	3.8	3.6	2.7	.....
15	2.8	3.2	3.0	3.7	4.0	3.8	.....	30	2.4	.....	3.6	3.8	3.6	2.6	.....
								31	3.0	.....	3.6	.....	3.6	2.6	.....

Daily gage height, in feet, of Turlock canal near Lagrange, Cal., for 1901–1912—Contd.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903.									
1	.....	1.5	3.0	2.0	3.6	4.0	4.0	3.5	1.6
2	.....	1.5	2.3	3.0	3.6	4.0	4.0	3.4	1.5
3	.....	2.4	2.6	3.0	3.5	4.0	4.0	3.3	1.5
4	1.5	2.4	3.1	3.0	3.5	4.0	4.0	3.3	1.5
5	1.5	2.4	2.5	3.0	3.6	4.0	4.0	2.8	1.5
6	1.5	2.4	3.0	3.0	3.6	4.0	4.0	2.7	1.4
7	2.0	2.4	3.0	3.0	3.7	4.0	4.0	3.5	1.5
8	2.0	2.4	1.9	3.0	3.8	4.0	4.0	2.7	1.5
9	.....	.....	3.0	3.1	3.8	4.0	4.0	2.4	1.5
10	.....	2.4	3.0	3.1	3.8	4.0	4.0	2.4	1.6
11	.....	2.4	3.0	3.1	3.8	4.0	4.0	2.4	1.5
12	1.9	2.4	3.0	3.1	3.8	4.0	4.0	2.4	1.4
13	1.9	2.4	2.1	3.1	3.8	4.0	4.0	2.4	1.4
14	2.1	2.4	2.5	3.1	3.8	4.0	4.0	2.4	1.3
15	2.4	2.4	1.7	3.2	3.9	4.0	4.0	2.3	1.3
16	2.4	2.4	3.0	3.3	3.9	4.0	4.0	1.8	1.3
17	.....	.....	3.0	3.3	3.9	4.0	4.0	1.8	1.3
18	2.0	.....	3.0	3.3	3.9	4.0	4.0	2.0	1.3
19	2.0	.....	3.0	3.3	4.0	4.0	4.0	1.9	1.3
20	2.4	.....	3.0	3.3	4.0	4.0	4.0	1.8	1.3
21	1.5	.7	3.0	3.3	4.0	4.0	4.0	1.8	1.3
22	1.7	1.5	3.0	3.4	4.0	4.0	4.0	1.8	1.3
23	1.7	2.0	3.0	3.4	4.0	4.0	4.0	1.9	1.3
24	1.9	2.5	3.1	3.3	4.0	4.0	4.0	1.9	1.3
25	1.9	2.1	3.3	3.3	4.0	4.0	4.0	2.0	1.6
26	.....	3.0	3.3	3.3	4.0	4.0	4.0	1.9	1.6
27	.....	3.0	3.3	3.4	4.0	4.0	4.0	1.9	1.4
28	.....	3.0	2.1	3.5	4.0	4.0	4.0	1.8	1.4
29	.....	.....	1.5	3.5	4.0	4.0	3.8	1.7	1.4
30	.....	.....	1.6	3.5	4.0	4.0	3.8	1.7	1.4
31	.....	.....	1.8	.....	4.0	.....	3.5	1.6	.....

Day.	Oct.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903–4.										
1	1.4	.....	2.4	4.15	4.0	4.75	5.0	.....	0.8	3.2
2	1.3	.....	3.25	4.15	4.3	4.7	4.95	2.6	3.6	2.6
3	1.2	.....	3.15	4.15	4.4	4.75	5.05	3.6	4.05	2.8
4	.....	.....	3.15	4.25	4.4	4.8	5.0	4.1	4.5	2.6
5	.....	.....	3.6	4.25	4.4	4.8	5.1	4.5	4.6	2.7
6	.....	.....	3.6	4.25	4.45	4.85	5.1	3.35	4.6	2.6
7	.....	.....	3.6	2.1	4.4	4.8	5.15	3.9	4.6	2.5
8	.....	.....	3.6	.....	4.5	4.8	5.1	4.9	4.6	2.4
9	.....	.....	3.3	.....	4.6	4.7	5.1	4.8	4.6	2.4
10	.....	.....	3.6	.....	4.6	4.8	4.0	4.8	4.6	2.3
11	.....	.....	3.6	.....	4.6	4.9	.9	4.85	4.6	2.2
12	.....	.....	3.4	.....	4.65	4.9	4.9	4.85	4.6	2.2
13	.....	.....	3.8	.85	4.7	4.95	.....	3.95	4.6	2.2
14	.....	.....	3.85	3.1	4.7	4.95	.....	4.55	4.15	2.2
15	.....	.....	3.5	3.5	4.7	4.95	.....	4.6	4.1	2.15
16	.....	.....	3.75	2.05	4.7	4.95	.....	4.6	4.1	2.15
17	.....	.....	4.0	.....	4.7	5.0	.....	4.8	4.6	2.55
18	.....	.....	4.0	.....	4.7	5.0	.....	4.85	4.6	2.55
19	.....	.....	4.0	.....	3.8	4.95	.....	.8	4.7	2.65
20	.....	1.5	4.0	.....	4.7	5.0	.....	.8	4.6	2.6
21	.....	1.5	4.0	.....	4.7	5.0	.....	.8	4.5	2.5
22	.....	1.1	3.8	.....	4.7	5.05	.....	.8	4.0	2.3
23	.....	2.0	4.0	.....	4.7	5.0	.....	.4	3.6	2.3
24	.....	2.0	3.6	.....	4.7	5.0	.....	1.3	3.5	3.5
25	.....	2.0	3.8	.....	4.8	5.0	.....	2.6	3.45	3.2
26	.....	2.45	2.55	.....	4.7	5.05	.....	4.0	3.45	2.0
27	.....	3.25	3.2	.....	4.75	5.05	.....	4.05	3.3	4.4
28	.....	3.1	4.15	.....	4.7	5.05	.....	4.05	3.45	4.4
29	.....	3.25	4.15	.....	4.75	5.05	.....	4.7	3.45	4.4
30	.....	3.25	.....	.....	4.75	5.1	.....	4.8	3.6	4.4
31	.....	3.15	.....	3.0	.....	5.0	.....	.8	3.2	.....

Daily gage height, in feet, of Turlock canal near Lagrange, Cal., for 1901–1912—Contd.

Day.	Oct.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904–5.								
1	4.4	.....	4.15	5.3	5.4	5.55	3.1	2.0
2	4.4	.....	4.1	5.3	5.4	5.6	3.2	2.0
3	4.4	.....	4.1	5.4	5.4	5.6	3.15	1.9
4	4.4	.....	4.15	5.2	5.4	5.6	2.9	1.9
5	4.4	.....	4.2	5.2	5.4	5.6	2.95	1.9
6	3.9	.....	.....	5.2	5.4	5.6	2.95	1.8
7	4.4	.....	.....	4.1	5.4	5.6	2.65	1.8
8	4.4	.....	3.2	4.6	5.4	5.6	2.65	1.65
9	4.4	.....	3.0	4.7	5.4	5.6	2.65	1.65
10	3.7	.....	1.5	4.7	5.45	5.6	2.65	1.65
11	4.0	.....	4.6	4.7	5.4	5.6	2.65	1.65
12	4.4	.....	4.7	4.7	5.5	5.6	2.6	1.65
13	4.4	.....	4.8	4.7	5.5	5.6	2.7	1.8
14	4.4	.....	5.5	4.75	5.5	5.6	2.4	2.5
15	4.4	.....	5.5	4.85	5.5	3.6	2.4	2.1
16	4.3	.....	5.5	4.9	5.5	5.6	2.4	2.1
17	4.3	.....	5.5	5.0	5.5	5.2	2.4	1.8
18	3.6	.....	5.5	5.0	5.55	5.4	2.4	1.8
19	3.3	.....	5.2	5.0	5.5	5.0	2.4	1.7
20	2.8	.....	5.2	.....	5.5	5.0	2.0	1.75
21	.....	.....	5.3	.....	5.5	4.8	2.15	1.75
22	.....	1.6	5.2	5.3	5.5	4.8	2.2	1.75
23	.....	2.1	5.25	5.25	5.5	4.2	2.2	1.75
24	.....	2.1	5.25	5.25	5.5	4.55	2.2	1.75
25	.....	3.0	5.25	5.3	5.55	4.55	2.2	1.75
26	.....	3.4	5.2	5.4	5.55	4.5	2.2	1.75
27	.....	4.1	5.3	5.4	5.55	4.25	2.2	.....
28	.....	4.1	5.4	5.4	5.55	4.0	1.8	.....
29	.....	2.1	5.3	5.4	5.6	4.1	1.8	.....
30	.....	4.1	5.3	5.4	5.55	3.6	1.8	.....
31	.....	4.0	.....	5.4	.....	3.6	2.0	.....

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906.									
1	.....	5.25	3.25	.....	4.5	5.0	6.05	6.05	5.05
2	.....	5.6	3.25	2.0	4.1	5.0	6.05	6.05	5.25
3	.....	5.6	2.9	2.0	4.4	5.0	6.05	6.05	4.1
4	.....	5.6	2.4	2.0	5.4	5.0	6.0	6.05	4.35
5	.....	5.7	2.0	2.0	5.35	5.6	6.05	6.05	4.4
6	.....	5.7	2.0	2.0	5.35	5.5	6.05	6.0	4.3
7	.....	5.7	2.0	2.0	5.35	5.5	6.05	6.05	4.25
8	2.05	5.7	2.0	2.0	5.35	5.65	6.05	6.05	4.2
9	2.05	5.75	.....	2.0	5.35	5.75	6.05	6.05	4.05
10	2.65	4.65	.....	.....	5.6	5.75	6.05	6.05	3.75
11	2.65	5.7	.....	.....	5.6	5.8	6.05	6.05	3.9
12	2.7	5.9	.....	2.5	5.6	5.8	6.05	6.05	3.9
13	2.7	5.1	.....	2.6	5.6	5.8	6.05	6.05	3.8
14	2.6	4.55	.....	2.5	5.6	5.8	6.05	6.05	3.4
15	2.5	5.1	.....	2.5	5.6	5.5	6.05	6.05	3.5
16	2.55	5.4	.....	2.5	5.6	6.0	6.05	6.05	3.4
17	2.6	2.25	.....	2.5	5.6	6.0	6.05	6.05	3.4
18	2.1	.....	.....	2.5	5.6	6.0	6.05	6.05	3.0
19	2.5	3.0	.....	2.5	5.6	6.0	5.08	6.0	3.05
20	2.7	3.7	.....	2.5	5.6	6.0	6.05	6.05	2.85
21	2.7	3.75	.75	2.6	5.7	6.0	6.05	6.05	2.85
22	2.7	4.6	2.0	2.6	5.8	6.0	6.05	.....	2.75
23	2.8	4.0	1.25	2.6	5.8	6.0	6.05	.....	2.75
24	2.4	3.2	.....	2.6	5.85	6.0	6.05	5.02	2.7
25	.5	3.5	.....	2.6	5.05	6.05	6.05	5.02	2.7
26	1.7	3.5	.....	3.15	5.9	6.0	6.05	5.45	2.75
27	3.7	3.5	.....	3.6	4.7	6.05	6.05	5.87	2.75
28	3.9	3.5	.....	3.6	5.7	6.05	6.05	5.04	2.7
29	3.9	.....	.....	3.6	5.45	6.05	6.05	5.05	2.6
30	5.1	.....	.....	4.0	5.6	6.05	6.05	5.15	2.55
31	5.1	.....	.....	.....	5.3	.....	6.05	5.0	.....

Daily gage height, in feet, of Turlock canal near Lagrange, Cal., for 1901–1912—Contd.

Day.	Oct.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.										
1	2.5			2.8		4.25	5.15	5.1	5.3	3.45
2	2.4			2.8		4.7	5.3	5.1	5.3	4.25
3	2.4			.2		4.8	5.4	5.1	5.3	3.7
4	2.4			.0		4.8	5.4	5.1	5.3	3.55
5	2.4			.0		5.0	5.4	5.1	5.3	3.55
6	2.4			.5		5.1	5.4	5.05	5.4	4.5
7	2.35			.5		5.1	5.4	5.1	5.4	3.8
8	2.3			1.0		5.2	5.35	5.1	5.4	3.6
9				1.0		5.2	5.4	5.1	5.4	3.55
10				.0		5.25	5.4	5.1	5.4	3.4
11				.6		5.3	5.4	5.1	5.4	3.3
12			2.4	1.15		5.3	5.35	5.1	5.4	3.35
13			3.6	1.15		5.3	5.3	5.1	5.4	3.4
14			3.6	1.15		5.3	5.3	5.1	5.4	3.4
15			3.6	1.15		5.3	5.0	5.1	5.4	3.2
16			3.6	1.15	0.85	5.15	5.0	5.1	5.4	3.0
17			2.1	1.15	1.7	5.1	4.7	5.2	5.4	2.85
18			2.1		1.7	5.1	4.7	5.2	5.4	2.7
19			2.1		2.15	5.15	4.7	5.2	5.4	2.6
20			2.1		2.6	5.1	4.7	5.2	5.3	2.5
21			2.1		2.6	5.1	4.7	5.2	5.15	2.3
22			.6		3.0	5.1	4.7	5.2	5.05	2.2
23			.6		3.35	5.1	4.7	5.2	5.0	2.1
24			.6		3.35		4.7	5.3	4.85	2.05
25			2.8		3.35		4.7	5.3	4.45	2.0
26			2.8		3.8		4.7	5.3	4.05	2.0
27			2.8		3.8		5.0	5.3	3.8	2.05
28			2.8		3.8	5.1	5.0	5.3	4.25	2.0
29					4.25		5.0	5.3	4.4	1.9
30					4.25	5.0	5.1	5.3	4.3	2.0
31						5.15		5.3	4.05	
1907–8.										
1	1.95		.2	2.2	4.7	5.4	5.5	5.7	3.6	.75
2	2.45		.2	2.2	5.0	5.4	5.45	5.7	3.65	.8
3	2.5		.2	2.2	5.2	5.35	5.45	5.7	4.5	.75
4	2.5		.2	2.2	5.4	5.4	5.45	5.75	4.35	.7
5	2.35		.2	2.2	5.5	5.35	5.6	5.7	3.4	.7
6	2.25		.2	2.2	5.55	5.4	5.6	5.75	3.05	.65
7	2.25		.2	2.2	4.0	5.4	5.6	5.65	2.85	.65
8	2.2		.2	2.2	5.65	5.35	6.0	5.6	2.6	.95
9			.2	2.2	5.7	5.35	6.0	5.5	2.4	.95
10			.2	2.2	5.7	5.45	6.0	4.95	2.3	1.3
11			.2	2.2	5.7	5.4	5.55	4.5	2.1	1.5
12			.2	2.2	5.8	5.5	5.5	4.6	2.1	1.3
13			.2	2.2	5.0	5.5	5.55	5.15	2.0	1.2
14			1.2	2.2	5.0	5.5	5.55	4.75	1.9	1.5
15			1.2	2.45	5.0	5.55	5.55	4.25	1.8	
16			1.2	2.7	5.05	5.5	5.55	3.95	1.6	
17			1.2	2.95	5.1	5.45	5.55	3.75	1.45	
18			1.2	3.2	5.2	5.45	5.55	3.65	1.45	
19			1.2	3.2	5.2	5.45	5.55	3.4	1.45	
20			1.2	3.7	5.3	5.45	5.6	3.45	1.35	
21			1.2	3.7	5.3	5.55	5.55	3.45	1.3	
22			1.7	3.7	5.3	5.55	5.6	3.1	1.3	
23			1.7	3.7	5.25	5.55	5.6	3.05	1.25	
24			1.7	3.7	5.3	5.45	5.7	3.05	1.2	
25		0.4	1.7	3.7	5.3	5.5	5.7	3.05	1.2	
26		.4	1.7	3.95	5.3	5.5	5.7	2.8	1.1	
27		.4	1.7	4.2	5.25	5.4	5.7	2.7	1.05	
28		.2	2.2	4.45	5.3	5.5	5.7	3.2	1.0	
29		.2	2.2	4.7	5.3	5.5	5.7	3.35	.9	
30		.2		4.7	5.4	5.5	5.7	3.2	.9	
31		.2		4.7		5.4		3.45	.8	

Daily gage height, in feet, of Turlock canal near Lagrange, Cal., for 1901–1912—Contd.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	.....	2.5	2.4	3.2	5.8	.....	6.15	4.6	1.75
2	1.4	2.2	2.4	3.2	5.9	.....	6.25	4.45	1.85
3	1.4	.5	2.4	3.2	5.9	.....	6.25	4.25	1.9
4	.9	2.1	2.45	3.2	5.9	.....	6.15	4.15	1.8
5	2.7	2.1	2.45	3.2	5.95	6.2	6.1	4.45	1.7
6	3.3	1.7	1.6	3.2	5.9	6.2	6.15	4.05	1.6
7	3.0	1.7	1.6	3.2	5.9	6.2	6.2	3.85	1.5
8	1.0	.6	1.6	3.2	6.0	6.3	6.15	3.75	1.55
9	1.0	1.7	1.6	3.2	6.0	6.2	6.2	3.5	1.5
10	1.0	1.7	1.6	3.2	6.05	6.25	6.2	3.35	1.45
11	1.3	.4	1.6	3.2	6.0	6.25	6.2	3.15	1.3
12	1.3	.....	2.2	3.6	3.7	6.15	6.1	3.3	1.25
13	.....	1.0	2.2	4.0	.....	6.25	6.15	2.95	1.2
14	.....	1.05	2.5	5.0	.....	6.1	6.2	2.8	1.2
15	.5	1.5	3.0	5.0	3.7	6.25	6.2	2.7	1.1
16	.7	1.5	3.5	5.0	6.0	6.2	6.2	2.6	1.05
17	.7	1.5	3.5	5.0	6.0	6.1	6.25	2.5	1.0
18	.7	1.5	3.2	5.0	4.0	6.25	6.2	2.35	.95
19	1.5	1.5	3.2	5.0	6.3	6.2	6.2	2.35	.95
20	1.0	1.5	3.2	5.0	6.05	6.15	6.25	2.35	.95
21	.....	1.0	3.2	5.0	6.1	6.25	6.25	2.45	.9
22	.....	1.5	.....	5.0	5.95	.....	6.25	2.45	.9
23	.....	1.5	.....	5.4	6.0	6.25	6.25	2.5	.9
24	.....	.8	.....	5.5	6.0	6.25	6.25	2.45	.85
25	.....	.8	.....	5.5	6.0	6.2	6.25	2.45	.8
26	.....	1.55	4.0	5.5	6.1	6.2	6.2	2.25	.85
27	.....	1.55	3.2	5.1	6.2	6.2	6.1	1.95	.85
28	.....	1.55	3.2	5.4	6.2	6.2	5.4	1.9	.9
29	.....	.....	2.0	5.7	6.15	6.25	4.75	1.7	.8
30	.....	.....	3.2	5.7	6.3	6.2	5.0	1.75	.7
31	.....	.....	3.2	.....	6.5	.....	4.75	1.7	.....

Day.	Oct.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.									
1	0.75	.....	2.4	4.0	5.5	.....	5.45	2.25	0.35
2	.8	.....	2.4	4.0	5.5	.....	5.3	2.1	.35
3	1.0	.....	2.45	4.0	5.5	.....	5.15	2.0	.3
4	3.2	.....	3.05	4.0	.3	.....	4.95	1.85	.15
5	3.5	.....	3.05	4.0	3.8	.....	4.6	1.8	.2
6	3.1	.....	3.5	4.0	5.45	.....	4.25	1.65	.2
7	2.85	.....	3.5	4.0	5.55	.....	4.1	1.55	.2
8	2.65	.....	3.5	4.0	5.6	.....	4.1	1.45	.2
9	2.25	1.4	3.5	4.05	5.6	.....	4.45	1.35	.2
10	2.4	1.45	3.5	4.0	.....	.....	4.4	1.35	.2
11	2.4	1.7	3.45	4.0	.....	.....	4.4	1.35	.2
12	2.4	1.75	3.5	3.95	.....	.....	4.35	1.15	.2
13	2.4	1.75	3.5	4.0	.....	.....	4.05	1.1	.2
14	2.3	1.8	3.5	4.05	.....	.....	3.75	1.05	.15
15	2.2	1.95	4.0	4.0	.....	.....	3.55	1.0	.15
16	2.0	2.25	4.0	4.0	.....	.....	3.45	.95	2.5
17	1.8	2.4	4.0	4.05	.....	.....	3.3	.9	4.0
18	1.75	2.4	4.05	4.05	.....	.....	3.15	.75	4.0
19	1.7	2.4	4.05	4.0	.....	.....	4.8	.7	3.95
20	1.75	2.4	4.0	4.5	.....	.....	4.85	.7	2.6
21	1.7	2.4	3.85	4.5	.....	.....	5.4	.7	2.2
22	2.0	2.4	3.0	4.5	.....	1.0	4.3	.5	1.85
23	.....	2.4	4.0	4.5	.....	2.0	3.75	.5	1.6
24	.....	2.4	4.0	5.0	.....	3.0	3.4	.5	1.35
25	.....	2.4	3.95	5.0	.....	4.7	3.1	.5	1.15
26	.....	2.4	4.0	5.05	.....	5.05	2.8	.5	1.05
27	.....	2.4	4.0	5.0	.....	5.3	2.7	.5	1.0
28	.....	2.4	4.0	5.05	.....	5.5	2.6	.55	.8
29	.....	.....	2.8	4.9	.....	5.6	2.6	.45	1.2
30	.....	.....	4.0	5.0	.....	5.5	2.6	.45	1.35
31	.....	.....	4.0	.....	.....	.....	2.45	.45	.....

Daily gage height, in feet, of Turlock canal near Lagrange, Cal., for 1901–1912—Contd.

Day.	Oct.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.								
1	1.05	.....	5.5	5.95	6.25	6.18	6.00	2.33
2	.....	.....	5.5	6.0	6.25	6.2	5.85	2.25
3	.....	.....	5.55	6.0	6.25	6.2	5.75	2.15
4	.....	.....	5.5	6.05	6.3	6.2	5.7	2.05
5	.....	.....	5.55	6.02	6.25	6.2	5.65	2.19
6	.....	.....	4.45	6.05	6.23	6.2	5.6	1.82
7	.....	.....	4.5	6.08	6.18	6.2	5.45	1.68
8	.....	0.5	4.5	6.1	6.2	6.2	5.12	1.75
9	.....	.5	5.0	6.12	6.23	6.1	5.3	1.75
10	.....	1.3	4.95	6.15	6.25	6.18	5.1	1.4
11	.....	1.3	4.95	6.18	6.25	6.2	4.9	1.7
12	.....	2.2	5.0	6.18	6.25	6.22	4.8	1.41
13	.....	2.7	5.0	6.2	6.22	6.2	4.45	1.27
14	.....	2.65	5.0	6.2	6.2	6.22	4.4	1.4
15	.....	3.4	5.0	6.18	6.3	6.2	4.0	1.1
16	.....	3.4	5.0	6.18	6.22	6.2	3.82	1.05
17	.....	3.85	5.0	6.2	6.22	6.2	3.85	1.0
18	.....	3.8	5.0	6.18	6.22	6.2	3.55	1.0
19	.....	3.8	5.2	6.28	6.22	6.18	3.45	.95
20	.....	3.8	5.3	6.25	6.2	6.18	3.3	.95
21	.....	3.8	5.4	6.25	6.22	6.2	3.2	.85
22	.....	3.8	5.5	6.25	6.2	6.18	3.0	1.0
23	.....	4.3	5.52	6.25	6.2	6.12	2.88	.92
24	.....	4.3	5.52	6.22	6.18	6.15	2.75	1.0
25	.....	4.3	5.52	6.18	6.18	6.15	2.65	1.1
26	.....	4.3	5.6	6.2	6.22	6.15	2.55	1.25
27	.....	4.3	5.7	6.2	6.22	6.1	2.53	1.05
28	.....	4.6	5.8	6.2	6.2	6.02	2.48	1.0
29	.....	4.9	5.85	6.2	6.18	6.0	2.45	1.0
30	.....	4.9	5.9	6.23	6.2	6.15	2.4	1.0
31	.....	5.2	.....	6.18	.....	5.98	2.35	.....

Day.	Oct.	Feb.	Mar.	Apr.	May.	June.	Day.	Oct.	Feb.	Mar.	Apr.	May.	June.
1911–12.							1911–12.						
1	0.95	.....	1.8	4.4	6.0	6.5	16	.....	2.6	5.8	5.6	6.5	6.5
2	.95	.....	1.95	4.7	6.1	6.6	17	.....	2.4	5.0	5.7	6.4	6.7
3	1.7	.....	2.2	5.0	6.1	6.6	18	.....	2.4	4.4	5.8	6.6	6.7
4	1.45	.....	2.3	4.9	6.0	6.6	19	.....	2.6	4.4	5.8	6.6	6.7
5	1.32	.....	2.7	5.3	6.0	6.5	20	.....	2.6	4.5	5.5	6.4	6.7
6	1.3	.....	3.0	5.4	6.2	6.6	21	.....	2.6	4.6	5.0	6.6	6.7
7	1.25	.....	4.0	.....	6.2	6.6	22	.....	2.5	4.2	5.0	6.5	6.6
8	1.22	.....	4.5	.....	6.4	6.6	23	.....	2.4	3.9	5.0	6.6	6.4
9	1.2	.....	4.2	.....	6.4	6.6	24	.....	2.2	4.2	5.0	6.4	6.5
10	1.2	2.0	4.0	.....	6.4	6.6	25	.....	2.2	4.5	5.2	6.5	6.4
11	1.2	1.95	4.0	.....	6.4	6.6	26	.....	1.9	4.8	5.5	6.6	6.4
12	1.45	3.0	3.6	.....	6.4	6.5	27	.....	1.85	4.8	5.8	6.5	6.4
13	1.5	2.7	4.5	4.5	6.4	6.6	28	.....	1.9	4.4	5.4	6.6	6.5
14	1.35	2.5	5.0	5.0	6.4	6.6	29	.....	1.85	4.7	5.9	6.6	6.5
15	.....	2.4	4.5	5.4	6.5	6.7	30	.....	.....	5.0	6.0	6.7	6.5
							31	.....	.....	4.6	.....	6.4	.....

NOTE.—Canal dry on days when gage was not read except June 2–4 and 22, 1909, and Apr. 7 and 12, 1912. There is no record for Jan. 1 to Mar. 6, 1902.

Rating tables for Turlock canal near Lagrange, Cal.

Mar. 7 to July 31, 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
2.0	113	2.5	182	3.0	268	3.5	360
2.1	125	2.6	198	3.1	286	3.6	380
2.2	138	2.7	215	3.2	304	3.7	400
2.3	152	2.8	232	3.3	322	3.8	420
2.4	166	2.9	250	3.4	340	4.0	460

Rating tables for Turlock canal near Lagrange, Cal.—Continued.

Approximate table for August, 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
2.6	105	3.0	175	3.4	247	3.8	327
2.7	122	3.1	193	3.5	267	3.9	347
2.8	139	3.2	211	3.6	287	4.0	367
2.9	157	3.3	229	3.7	307		

Jan. 1 to Dec. 31, 1903.

0.1	2	1.1	45	2.1	145	3.1	288
.2	4	1.2	52	2.2	158	3.2	304
.3	6	1.3	60	2.3	172	3.3	320
.4	8	1.4	69	2.4	186	3.4	336
.5	11	1.5	78	2.5	200	3.5	352
.6	15	1.6	88	2.6	214	3.6	368
.7	20	1.7	98	2.7	228	3.7	384
.8	26	1.8	109	2.8	243	3.8	400
.9	32	1.9	120	2.9	258	3.9	416
1.0	38	2.0	132	3.0	273	4.0	432

Jan. 1 to July 1, 1904.

0.00	0.0	1.40	30	2.80	179	4.20	375
.10	.5	1.50	37	2.90	192	4.30	390
.20	1	1.60	45	3.00	205	4.40	405
.30	1.5	1.70	55	3.10	218	4.50	420
.40	2	1.80	65	3.20	231	4.60	436
.50	2.5	1.90	75	3.30	244	4.70	452
.60	3	2.00	85	3.40	257	4.80	468
.70	4	2.10	96	3.50	270	4.90	484
.80	6	2.20	107	3.60	285	5.00	500
.90	9	2.30	118	3.70	300	5.10	516
1.00	12	2.40	129	3.80	315	5.20	532
1.10	16	2.50	141	3.90	330	5.30	548
1.20	20	2.60	153	4.00	345	5.40	564
1.30	25	2.70	166	4.10	360	5.50	580

July 2 to Dec. 31, 1904.

0.40	1	1.60	42	2.80	178	4.00	355
.50	2	1.70	50	2.90	192	4.10	372
.60	3	1.80	58	3.00	206	4.20	389
.70	4	1.90	67	3.10	220	4.30	406
.80	6	2.00	76	3.20	235	4.40	423
.90	9	2.10	86	3.30	250	4.50	440
1.00	12	2.20	97	3.40	265	4.60	457
1.10	16	2.30	109	3.50	280	4.70	474
1.20	20	2.40	122	3.60	295	4.80	491
1.30	24	2.50	136	3.70	310	4.90	508
1.40	29	2.60	150	3.80	325	5.00	525
1.50	35	2.70	164	3.90	340		

Jan. 1 to Dec. 31, 1905.[a]

0.30	1	1.50	40	2.70	166	3.90	324
.40	2	1.60	47	2.80	178	4.00	338
.50	3	1.70	55	2.90	190	4.20	366
.60	4	1.80	64	3.00	202	4.40	394
.70	5	1.90	74	3.10	215	4.60	422
.80	7	2.00	85	3.20	228	4.80	450
.90	10	2.10	96	3.30	241	5.00	478
1.00	14	2.20	107	3.40	254	5.20	506
1.10	18	2.30	118	3.50	268	5.40	535
1.20	23	2.40	130	3.60	282	5.60	565
1.30	28	2.50	142	3.70	296		
1.40	34	2.60	154	3.80	310		

[a] The above table is based on discharge measurements made during 1904–5. It is well defined between gage heights 2 feet and 5.5 feet.

Rating tables for Turlock canal near Lagrange, Cal.—Continued.

Jan. 1 to Dec. 31, 1906.[a]

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
0.50	4	1.70	76	2.90	201	4.20	365
.60	6	1.80	85	3.00	213	4.40	392
.70	10	1.90	94	3.10	225	4.60	420
.80	14	2.00	104	3.20	237	4.80	448
.90	19	2.10	114	3.30	249	5.00	478
1.00	25	2.20	124	3.40	261	5.20	508
1.10	31	2.30	134	3.50	274	5.40	538
1.20	37	2.40	145	3.60	287	5.60	568
1.30	44	2.50	156	3.70	300	5.80	598
1.40	51	2.60	167	3.80	313	6.00	628
1.50	58	2.70	178	3.90	326		
1.60	67	2.80	189	4.00	339		

Jan. 1, 1907, to Dec. 31, 1908.[b]

0.10	1	1.30	100	2.50	255	4.40	555
.20	7	1.40	111	2.60	269	4.60	589
.30	13	1.50	123	2.70	283	4.80	623
.40	19	1.60	135	2.80	298	5.00	657
.50	26	1.70	147	2.90	313	5.20	691
.60	33	1.80	160	3.00	328	5.40	725
.70	41	1.90	173	3.20	358	5.60	760
.80	50	2.00	186	3.40	390	5.80	796
.90	59	2.10	199	3.60	422	6.00	832
1.00	69	2.20	213	3.80	454		
1.10	79	2.30	227	4.00	487		
1.20	89	2.40	241	4.20	521		

[a] This table is based on 17 discharge measurements made during 1906 and is well defined above gage heights 1 foot.

[b] This table is not applicable for obstructed-channel conditions. It is based on 11 discharge measurements made in 1907 and 1908 and is well defined.

Daily discharge, in second-feet, of Turlock canal near Lagrange, Cal., for 1899–1900, 1909–1912.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1899.				1899.				1899.			
1	5	80	34	11	10	85	34	21	10	86	10
2	5	80	34	12	10	85	8	22	5	86	10
3	5	80	34	13	10	85	8	23	8	10	10
4	5	80	34	14	10	85	8	24	8	8	10
5	5	80	34	15	10	85	10	25	1	8	10
6	5	80	34	16	10	85	10	26	1	8	10
7	5	1	34	17	10	85	10	27	1	10	10
8	5	20	34	18	48	85	10	28	1	10	10
9	10	20	34	19	48	85	10	29	1	10	10
10	10	85	34	20	48	86	10	30	8	10	10
								31	28	10	.....

Day.	Oct.	Nov.	Dec.	Jan	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899–1900.												
1	10	3	.....	.....	64	64	.....	133	133	133	133	28
2	10	3	.....	.....	64	64	.....	133	133	133	133	36
3	10	3	.....	.....	64	64	.....	133	133	133	133	36
4	10	3	.....	.....	64	64	.....	133	133	133	133	36
5	10	3	.....	.....	64	64	133	133	133	133	133	36
6	10	3	.....	.....	64	64	133	133	133	133	133	36
7	10	3	.....	.....	64	64	133	133	133	133	.....	36
8	10	3	.....	.....	64	64	.....	133	133	133	.....	36
9	10	3	.....	.....	64	64	.....	133	133	133	.....	36
10	10	3	.....	.....	64	64	133	133	9	133	.....	36

Daily discharge, in second-feet, of Turlock canal near Lagrange, Cal., for 1899–1900, 1909–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899–1900.												
11	10	3	.....	.....	64	64	133	133	9	133	.....	36
12	10	1	.....	.....	64	133	133	133	9	133	.....	36
13	10	1	.....	.....	64	133	133	133	9	133	114	36
14	10	.....	.....	.....	64	85	133	133	9	133	114	36
15	10	.....	.....	.....	64	85	64	133	9	133	85	36
16	10	.....	.....	.....	64	85	64	133	9	133	85	36
17	10	.....	.....	.....	64	85	64	133	9	133	.....	36
18	1	.....	.....	.....	64	64	64	133	9	133	.....	36
19	1	.....	.....	.....	85	64	64	133	9	133	.....	36
20	1	.....	.....	.....	133	85	64	133	9	133	.....	28
21	1	.....	.....	.....	133	85	64	133	9	133	.....	28
22	3	.....	.....	.....	28	85	133	133	9	133	64	28
23	3	.....	.....	.....	28	85	133	133	9	133	64	28
24	3	.....	.....	.....	28	85	133	133	9	133	74	.....
25	3	.....	.....	.....	28	85	133	133	133	133	64	.....
26	3	.....	.....	.....	28	85	133	133	133	133	55	.....
27	3	.....	.....	.....	40	85	133	133	133	133	55	.....
28	3	.....	.....	.....	64	85	133	133	133	.....	64	.....
29	3	.....	.....	.....	.....	133	133	133	133	.....	64	.....
30	3	.....	.....	.....	.....	133	133	133	133	.....	28	.....
31	3	.....	.....	.....	.....	133	.....	133	.....	133	28	.....

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	.....	260	247	360	795	.....	858	587	165
2	125	221	247	360	813	195	876	562	177
3	125	39	247	360	813	195	876	528	183
4	75	208	254	360	813	485	858	510	171
5	288	208	254	360	822	867	849	562	159
6	375	159	147	360	813	867	858	494	147
7	330	159	147	360	813	867	867	461	136
8	85	48	147	360	831	885	858	445	142
9	85	159	147	360	831	867	867	405	136
10	85	159	147	360	840	876	867	382	130
11	115	30	147	360	831	876	867	352	115
12	115	.....	221	421	437	858	849	375	110
13	.....	85	221	485	.....	876	858	323	105
14	.....	90	260	655	.....	849	867	302	105
15	39	136	330	655	437	876	867	288	95
16	57	136	405	655	831	867	867	274	90
17	57	136	405	655	831	849	876	260	85
18	57	136	360	655	485	876	867	240	80
19	136	136	360	655	885	867	867	240	80
20	85	136	360	655	840	858	876	240	80
21	.....	85	360	655	849	876	876	254	75
22	.....	136	.....	655	822	330	876	254	75
23	.....	136	.....	723	831	876	876	260	75
24	.....	66	.....	741	831	876	876	254	76
25	.....	66	.....	741	831	867	876	254	60
26	.....	142	485	741	849	867	867	228	70
27	.....	142	360	672	867	867	849	189	70
28	.....	142	360	723	867	867	723	183	75
29	.....	.....	195	777	858	876	612	159	66
30	.....	.....	360	777	885	867	655	165	57
31	.....	.....	360	.....	921	.....	612	159	.....

NOTE.—The canal was dry on days for which no gage height is given during 1899–1900.

Daily discharge, in second-feet, of Turlock canal near Lagrange, Cal., for 1899–1900, 1909–1912—Continued.

Day.	Oct.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.									
1	62	.....	260	533	827	0	817	238	26
2	66	.....	260	533	827	0	787	216	26
3	85	.....	268	533	827	0	757	202	22
4	360	.....	364	533	22	0	717	183	10
5	405	.....	364	533	496	0	647	177	14
6	345	.....	442	533	817	0	580	159	14
7	309	.....	442	533	837	0	552	147	14
8	281	.....	442	533	847	0	552	135	14
9	228	129	442	542	847	0	618	123	14
10	247	135	442	533	0	0	609	123	14
11	247	165	433	533	0	0	609	123	14
12	247	171	442	524	0	0	600	100	14
13	247	171	442	533	0	0	542	95	14
14	234	177	442	542	0	0	487	90	10
15	221	196	533	533	0	0	451	85	10
16	195	238	533	533	0	0	433	80	275
17	171	260	533	542	0	0	407	75	533
18	165	260	542	542	0	0	382	62	533
19	159	260	542	533	0	0	687	57	524
20	165	260	533	628	0	0	697	57	290
21	159	260	505	628	0	0	807	57	230
22	1 5	260	356	628	0	85	590	39	183
23	.....	260	533	628	0	202	487	39	153
24	.....	260	533	727	0	356	424	39	123
25	.....	260	524	727	0	667	373	39	100
26	.....	260	533	737	0	737	322	39	90
27	.....	260	533	727	0	787	306	39	85
28	.....	260	533	737	0	827	290	44	66
29	.....	.....	322	707	0	847	290	34	106
30	.....	.....	533	727	0	827	290	34	123
31	.....	.....	533	.....	0	.....	268	34	.....

Day.	Oct.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.								
1	90	.....	861	956	1,020	1,000	966	272
2	.....	.....	861	966	1,020	1,010	934	259
3	.....	.....	872	966	1,020	1,010	914	244
4	.....	.....	861	976	1,030	1,010	903	228
5	.....	.....	872	970	1,020	1,010	892	250
6	.....	.....	650	976	1,010	1,010	882	195
7	.....	.....	660	983	1,000	1,010	850	175
8	.....	40	660	987	1,010	1,010	784	185
9	.....	40	760	991	1,010	1,010	820	185
10	.....	126	750	998	1,020	1,000	780	138
11	.....	126	750	1,000	1,020	1,010	740	178
12	.....	251	760	1,000	1,020	1,010	720	139
13	.....	332	760	1,010	1,010	1,010	650	122
14	.....	324	760	1,010	1,010	1,010	641	138
15	.....	453	760	1,000	1,030	1,010	565	102
16	.....	453	760	1,000	1,010	1,010	531	96
17	.....	536	760	1,010	1,010	1,010	536	91
18	.....	527	760	1,000	1,010	1,010	480	91
19	.....	527	800	1,020	1,010	1,000	462	86
20	.....	527	820	1,020	1,010	1,000	435	86
21	.....	527	840	1,020	1,010	1,010	417	74
22	.....	527	861	1,020	1,010	1,000	383	91
23	.....	622	865	1,020	1,010	991	363	82
24	.....	622	865	1,010	1,000	998	340	91
25	.....	622	865	1,000	1,000	998	324	102
26	.....	622	882	1,010	1,010	998	307	120
27	.....	622	903	1,010	1,010	987	304	96
28	.....	680	924	1,010	1,010	970	296	91
29	.....	740	934	1,010	1,000	966	291	91
30	.....	740	945	1,010	1,010	998	283	91
31	.....	800	.....	1,000	.....	962	275	.....

Daily discharge, in second-feet, of Turlock canal near Lagrange, Cal., for 1899–1900, 1909–1912—Continued.

Day.	Oct.	Feb.	Mar.	Apr.	May.	June.	Day.	Oct.	Feb.	Mar.	Apr.	May.	June.
1911–12.							1911–12.						
1	86	0	177	602	914	1,020	16	.....	290	872	832	1,020	1,020
2	86	0	196	657	935	1,040	17	.....	260	714	852	998	1,060
3	178	0	230	714	935	1,040	18	.....	260	602	872	1,040	1,060
4	144	0	245	695	914	1,040	19	.....	290	602	872	1,040	1,060
5	128	0	306	772	914	1,020	20	.....	290	620	812	998	1,060
6	126	0	356	792	956	1,040	21	.....	290	638	714	1,040	1,060
7	120	0	530	360	956	1,040	22	.....	275	566	714	1,020	1,040
8	116	0	620	0	998	1,040	23	.....	260	512	714	1,040	998
9	114	0	566	0	998	1,040	24	.....	230	566	714	998	1,020
10	114	202	530	0	998	1,040	25	.....	230	620	752	1,020	998
11	114	196	530	0	998	1,040	26	.....	189	676	812	1,040	998
12	144	356	458	230	998	1,020	27	.....	183	676	872	1,020	998
13	151	306	620	620	998	1,040	28	.....	189	602	792	1,040	1,020
14	132	275	714	714	998	1,040	29	.....	183	657	893	1,040	1,020
15	.....	260	620	792	1,020	1,060	30	.....	.....	714	914	1,060	1,020
							31	.....	.....	638	.....	998	.....

NOTE.—These discharges are based on three rating curves applicable as follows: Jan. 1 to Dec. 31, 1909, well defined; Jan. 1 to Dec. 31, 1910, well defined between 250 and 850 second-feet; Jan. 1 to Dec. 31, 1911, well defined above 200 second-feet; Jan. 1 to June 30, 1912, well defined. Discharge estimated June 2–4 and 22, 1909, and Apr. 7 and 12, 1912. No water in the canal on days for which no discharge is given.

Monthly discharge of Turlock canal near Lagrange, Cal., for 1907–1912.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1907.					
January	0	0	0.0	0	
February	422	0	15.1	839	
March	298	0	42.9	2,640	
April	530	0	166	9,880	
May	708	0	562	34,600	
June	725	606	669	39,800	
July	708	665	686	42,200	
August	725	454	667	41,000	
September	530	173	324	19,300	
The period	.....	.....	.....	193,000	
1907–8.					
October	255	0	58.8	3,620	
November	0	0	.0	0	
December	0	0	.0	0	
January	19	0	2.74	168	
February	213	7	72.8	4,190	
March	606	213	341	21,000	
April	796	487	701	41,700	
May	751	716	734	45,100	
June	832	733	758	45,100	
July	787	298	534	32,800	
August	572	50	197	12,100	
September	123	0	32	1,900	
The year	832	0	286	208,000	
1908–9.					
October	0	0	0.0	0	
November	0	0	.0	0	
December	0	0	.0	0	
January	375	0	72.1	4,430	B.
February	260	0	127	7,050	B.
March	485	0	243	14,900	A.
April	777	360	555	33,000	A.
May	921	0	747	45,900	B.
June	885	0	764	45,500	B.
July	876	612	838	51,500	B.
August	587	159	329	20,200	A.
September	183	57	106	6,310	B.
The year	921	0	315	229,000	

Monthly discharge of Turlock canal near Lagrange, Cal., for 1907–1912—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1909–10.					
October	405	0	155	9,530	B.
November	0	0	.0	0	
December	0	0	.0	0	
January	0	0	.0	0	
February	260	0	161	8,940	A.
March	542	260	456	28,000	A.
April	737	524	592	35,200	A.
May	847	0	205	12,600	B.
June	847	0	178	10,600	B.
July	817	268	528	32,500	A.
August	238	34	95.6	5,880	B.
September	533	10	121	7,200	B.
The year	847	0	208	150,000	
1910–11.					
October	90	0	2.9	178	
November	0	0	.0	0	
December	0	0	.0	0	
January	0	0	.0	0	
February	0	0	.0	0	
March	800	0	367	22,600	A.
April	945	650	813	48,400	A.
May	1,020	956	999	61,400	A.
June	1,030	1,000	1,010	60,100	A.
July	1,010	962	1,000	61,500	A.
August	966	275	583	35,800	A.
September	272	74	140	8,330	B.
The year	1,030	0	410	298,000	
1911–12.					
October	178	0	56.5	3,470	C.
November	0	0	.0	0	A.
December	0	0	.0	0	A.
January	0	0	.0	0	A.
February	356	0	173	9,550	A.
March	872	177	548	33,700	A.
April	914	0	636	37,800	A.
May	1,060	914	998	61,400	A.
June	1,060	998	1,030	61,300	A.
The period				207,000	

LAGRANGE WATER & POWER CO.'S CANAL NEAR LAGRANGE, CAL.

The Lagrange Water & Power Co.'s canal takes water from the south side of Tuolumne River at Indian Bar, about 17 miles above the town of Lagrange. This canal was built in the early days to supply water for hydraulic mining in the vicinity of Lagrange, and it is now locally known as the "Lagrange mining ditch." Recently it has been thoroughly repaired and is now used as a supply canal for the new hydro-electric plant which was installed in the latter part of 1907. The power house is situated on the bank of the river about half a mile above the town of Lagrange and is below the dam and headworks of the Turlock and Modesto irrigation canals. Gage heights are depths of water in the flume.

The records for this station are considered good.

Gage-height record furnished by the Turlock irrigation district through Burton Smith, chief engineer.

Discharge measurements of Lagrange Water & Power Co.'s canal near Lagrange, Cal., in 1907–1912.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	*Sec.-feet.*			*Feet.*	*Sec.-feet.*
1907.				1909.			
Nov. 15	W. A. Lamb	0.90	12	June 2	W. F. Martin	1.60	30
				Aug. 4	do	1.68	33
1908.							
Mar. 3	W. F. Martin	.92	11	1911.			
May 1	W. A. Lamb	1.35	20	Feb. 16	J. E. Stewart	2.04	42
June 16	W. F. Martin	1.55	35	May 13	do	2.72	65
Sept. 11	W. V. Hardy		26				
Dec. 9	W. F. Martin	2.24	48	1912.			
				Apr. 11	J. E. Stewart	2.59	57
				July 13	do	2.62	58

Daily gage height, in feet, of Lagrange Water & Power Co.'s canal near Lagrange, Cal., for 1910–1912.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1910.							1910.						
1		2.60			2.65	2.60	16	2.40			2.63	2.60	
2		2.60			2.65	2.60	17	2.35			2.62	2.63	
3		2.60			2.60		18				2.55	2.63	
4		2.45			2.60	2.65	19	2.40			2.65	2.63	
5		2.60			2.63	2.60	20	2.40			2.62	2.62	
6		2.60			2.60	2.60	21	2.55			1.38	2.60	
7		2.60			2.55	2.55	22	2.55			1.32	2.60	
8		2.25			2.55	2.55	23	2.55			2.59	2.30	
9		2.25			2.60	2.55	24	2.55			2.55	2.63	
10					2.62	2.55	25	2.55			1.42	2.63	
11					2.63	2.58	26	2.50			1.40	2.65	
12	2.40			2.70	2.60		27	2.35			1.30	2.63	
13					2.60		28	2.35			1.30	2.65	
14	2.40			2.60	2.63		29	2.35			1.32	2.63	
15	2.40			2.60	2.62		30	2.50			1.38	2.60	
							31				2.64	2.60	
1911.							1911.						
1		2.67	2.72	2.70	2.68	2.70	16		2.72	2.70	2.70	2.70	2.65
2		2.68	2.70	2.70	2.65	2.70	17		2.72	2.70	2.70	2.70	2.62
3		2.68	2.72	2.70	2.55	2.72	18		2.72	2.70	2.70	2.70	2.55
4		2.70	2.73	2.70	2.48	2.70	19		2.72	2.70	2.69	2.70	2.52
5		2.73	2.72	2.70	2.55	2.70	20		2.72	2.70	2.70	2.70	2.30
6		2.73	2.72	2.70	2.60	2.70	21		2.72	2.70	2.70	2.65	2.70
7		2.73	2.72	2.70	2.65	2.70	22	2.63	2.73	2.70	2.70	2.70	2.73
8		2.72	2.70	2.70	2.60	2.60	23	2.64	2.73	2.70		2.70	2.70
9		2.72	2.70		2.67		24	2.64	2.73	2.70	2.70	2.70	2.70
10		2.72	2.65	2.69	2.70	2.70	25	2.65	2.72	2.72	2.70	2.72	2.73
11		2.74	2.72	2.70	2.70	2.70	26	2.67	2.70	2.72	2.69	2.70	2.73
12		2.72	2.72	2.69	2.70	2.75	27	2.65	2.65	2.72	2.58	2.72	2.72
13		2.73	2.72	2.70	2.70	2.75	28	2.65	2.67	2.72	2.50	2.73	2.70
14		2.73	2.72	2.70	2.70		29	2.70	2.70	2.70	2.65	2.70	2.60
15		2.73	2.72	2.70	2.70	2.72	30	2.70	2.72	2.70	2.65	2.70	2.55
							31		2.72		2.65	2.72	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	2.52	2.70	2.73	2.7	2.6	2.5		2.6	
2	2.65	2.70	2.73	2.6	2.6	2.6		2.6	2.3
3		.25	2.70	2.7	2.6	2.6		2.6	2.4
4	2.73	2.50	2.70	2.6	2.6	2.6	2.6	2.6	2.5
5	2.70	2.62	2.72		2.6	1.5	2.6	2.6	2.6
6	2.60	2.60	2.74	2.7	2.6	1.6	2.6	2.6	
7	2.50	2.60	2.75	2.7	2.6	2.6	2.6	2.6	2.6
8	2.35	2.60	2.75	2.7	2.6	2.5	2.6	2.6	2.6
9	2.30	2.60	2.74	2.7	2.6	2.5	2.6	2.6	2.6
10	2.30	2.60	2.72	2.7	2.6	2.5	2.6	2.6	2.5

Daily gage height, in feet, of Lagrange Water & Power Co.'s canal near Lagrange, Cal., for 1910–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911-12.									
11	2.70	2.72	.....	2.5	2.6	.3	2.4	2.6	2.6
12	2.74	2.72	2.55	2.6	2.6	1.5	2.4	2.6	2.6
13	.....	2.72	.....	2.6	2.6	2.2	2.6	2.6	2.6
14	2.62	2.72	.....	2.5	2.6	2.4	2.6	2.6	2.6
15	2.50	2.72	2.60	.....	2.6	2.4	2.6	2.6	2.6
16	2.30	2.72	2.60	2.6	2.6	2.4	2.6	2.6	2.6
17	2.74	2.72	.....	2.6	2.6	2.4	2.6	2.6	2.6
18	2.73	2.72	.....	2.6	2.6	2.4	2.6	2.6	2.6
19	2.73	2.72	2.65	2.6	2.6	2.4	2.6	2.6	2.6
20	2.73	2.72	2.60	2.6	2.6	2.6	2.6	2.6	2.6
21	2.73	2.72	2.65	2.6	2.6	2.6	2.6	.....	2.6
22	2.72	2.73	2.50	2.6	2.6	2.6	2.6	.....	2.6
23	2.70	2.73	.....	2.6	2.6	2.6	2.6	.....	2.6
24	2.68	2.73	2.60	2.6	2.6	2.6	2.6	.....	2.5
25	2.68	2.75	2.50	2.6	2.6	2.6	2.6	.....	2.6
26	2.70	2.75	2.00	2.5	.3	2.6	2.6	.....	2.6
27	2.70	2.74	2.25	2.5	2.6	2.6	2.6	.....	2.6
28	2.70	2.74	2.79	2.5	2.6	2.6	2.6	.....	2.6
29	2.68	2.74	2.55	2.6	2.6	2.6	2.6	.....	2.6
30	2.68	2.74	2.65	2.6	.....	2.6	2.6	.....	2.6
31	2.70	.....	2.65	2.6	.....	2.6	.....	.....	.....

Daily discharge, in second-feet, of Lagrange Water & Power Co.'s canal near Lagrange, Cal., for 1910–1912.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1910.							1910.						
1	.....	61	.....	.....	62.8	61.0	16	54.0	.....	.....	62.0	61.0	.....
2	.....	61	.....	.....	62.8	61.0	17	52.2	.....	.....	61.7	62.0	.....
3	.....	61	.....	.....	61.0	.0	18	.0	.....	.....	59.2	62.0	.....
4	.....	55.8	.....	.....	61.0	62.8	19	54.0	.....	.....	62.8	62.0	.....
5	.....	61	.....	.....	62.0	61.0	20	54.0	.....	.....	61.7	61.7	.....
6	.....	61	.....	.....	61.0	61.0	21	59.2	.....	.....	23.0	61.0	.....
7	.....	61	.....	.....	59.2	59.2	22	59.2	.....	.....	21.5	61.0	.....
8	.....	48.8	.....	.....	59.2	59.2	23	59.2	.....	.....	60.6	50.5	.....
9	.....	48.8	.....	.....	61.0	59.2	24	59.2	.....	.....	59.2	62.0	.....
10	.....	.....	.....	.....	61.7	59.2	25	59.2	.....	.....	24.0	62.0	.....
11	.....	.....	.....	.....	62.0	60.3	26	57.5	.....	.....	23.5	62.8	.....
12	54.0	.....	.....	64.5	61.0	.....	27	52.2	.....	.....	21.0	62.0	.....
13	.0	.....	.....	.0	61.0	.....	28	52.2	.....	.....	21.0	62.8	.....
14	54.0	.....	.....	61.0	62.0	.....	29	52.2	.....	.....	21.5	62.0	.....
15	54.0	.....	.....	61.0	61.7	.....	30	57.5	.....	.....	23.0	61.0	.....
							31	.....	.....	.....	62.4	61.0	.....

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1911.							1911.						
1	.....	63	65	64	64	64	16	.....	65	64	64	64	63
2	.....	64	64	64	63	64	17	.....	65	64	64	64	62
3	.....	64	65	64	59	65	18	.....	65	64	64	64	59
4	.....	64	66	64	57	64	19	.....	65	64	64	64	58
5	.....	66	65	64	59	64	20	.....	65	64	64	64	50
6	.....	66	65	64	61	64	21	.....	65	64	64	63	64
7	.....	66	65	64	63	64	22	62	66	64	64	64	66
8	.....	65	64	64	61	61	23	62	66	64	0	64	64
9	.....	65	64	0	63	0	24	62	66	64	64	64	64
10	.....	65	63	64	64	64	25	63	65	65	64	65	66
11	.....	66	65	64	64	64	26	63	64	65	64	64	66
12	.....	65	65	64	64	66	27	63	63	65	60	65	65
13	.....	66	65	64	64	66	28	63	63	65	58	66	64
14	.....	66	65	64	64	0	29	64	64	64	63	64	61
15	.....	66	65	64	64	65	30	64	65	64	63	64	59
							31	.....	65	.....	63	65	.....

Daily discharge, in second-feet, of Lagrange Water & Power Co.'s canal near Lagrange, Cal., for 1910–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	58	64	66	61	59	54	57	58	0
2	63	64	66	60	59	57	58	58	49
3	0	2.5	64	61	59	58	58	58	52
4	66	58	64	60	59	58	58	58	55
5	64	62	65	60	59	25	58	58	58
6	61	61	66	61	59	28	58	58	58
7	58	61	66	61	59	56	58	58	58
8	52	61	66	60	59	55	58	58	58
9	50	61	66	60	59	55	58	58	58
10	50	61	65	60	59	55	58	58	55
11	64	65	0	55	59	3	52	58	58
12	66	65	59	56	59	25	52	58	58
13	0	65	0	56	59	44	58	58	58
14	62	65	0	56	59	52	58	58	58
15	58	65	61	56	59	52	58	58	58
16	50	65	61	56	59	52	58	58	58
17	66	65	0	56	59	50	58	58	58
18	66	65	0	56	59	53	58	58	58
19	66	65	63	56	59	53	58	58	58
20	66	65	61	56	59	56	58	58	58
21	66	65	63	56	59	56	58	0	58
22	65	66	58	58	59	56	58	0	58
23	64	66	0	59	59	56	58	0	58
24	64	66	61	59	59	57	58	0	55
25	64	66	58	59	58	57	58	0	58
26	64	66	41	55	3	57	58	0	58
27	64	66	49	54	57	57	58	0	58
28	64	66	64	55	57	57	58	0	58
29	64	66	59	59	57	57	58	0	58
30	64	66	63	59	.....	57	58	0	58
31	64	.....	63	59	.....	57	.....	0	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: 1910–11, well defined; 1912, fairly well defined.

Monthly discharge of Lagrange Water & Power Co.'s canal near Lagrange, Cal., for 1908–1912.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1908.					
January	.....	.....	10	615	
February	.....	.....	10	555	
March	.....	.....	11	676	
April	.....	.....	20	1,190	
May	.....	.....	31	1,910	
June	.....	.....	36	2,140	
July	.....	.....	35	2,150	
August	.....	.....	40	2,460	
September	.....	.....	31	1,850	
The period	.....	.....	.....	13,500	
1908-9.					
October	.....	.....	35	2,150	
November	.....	.....	40	2,380	
December	.....	.....	45	2,770	
January	.....	.....	.....	.....	
February	.....	.....	.....	.....	
March	.....	.....	.....	.....	
April	.....	.....	44	2,620	
May	.....	.....	51	3,140	
June	.....	.....	47	2,800	
July	.....	.....	36	2,210	
August	.....	.....	29	1,780	
September	.....	.....	32	1,900	
The period	.....	.....	.....	14,400	

Monthly discharge of Lagrange Water & Power Co.'s canal near Lagrange, Cal., for 1908–1912—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1909–10.					
October			37		
April 12–30	59.2	0.0	49.7	1,870	B.
May 1–9	61.0	48.8	57.7	1,030	B.
June					
July 12–31	64.5	.0	42.7	1,690	B.
August	62.8	59.2	61.2	3,760	B.
September 1–11	62.8	.0	54.9	1,200	B.
1911.					
January			60	3,690	B.
February			60	3,330	B.
March			60	3,690	B.
April			60.9	3,620	B.
May	66	63	65.0	4,000	A.
June	66	63	62.5	3,720	A.
July	64	0	59.5	3,660	A.
August	66	57	63.3	3,890	A.
September	66	0	58.9	3,500	A.
The period				33,100	
1911–12.					
October	66	.0	57.8	3,550	A.
November	66	2.5	62.2	3,700	A.
December	66	.0	49.6	3,050	A.
January	61	54	57.9	3,560	A.
February	59	3	56.8	3,270	A.
March	58	3	50.5	3,110	A.
April	58	52	57.6	3,430	A.
May	58	0	37.4	2,300	A.
June	58	0	55.3	3,290	A.
The period				29,300	

NOTE.—The record for this canal is incomplete, but it is thought that the flow in the canal has been continuous and fairly uniform.

TUOLUMNE RIVER AT MODESTO, CAL.

(State Engineering Department station.)

The following information regarding records of discharge of Tuolumne River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

The discharge measurements were made at a station near the railroad bridge south of Modesto. The discharge includes Dry Creek, a tributary entering the river just above the point of observation. The drainage area (1,635 square miles) covers only the mountainous portions of the river and creek, there being no appreciable additional discharge in the valley part of their courses. A rating curve was developed and applied to a gage-height record maintained from 1879 to 1882, inclusive, and occasional observations were made subsequent to 1882. From these data and estimates of discharge based on the discharge per square mile of near-by drainage areas, estimates have been made which are presented as sufficiently exact for all purposes of a

general water-supply discussion. The discharge of several mining ditches taken from Tuolumne River in the mountains above the station has not been taken into consideration. For periods of very low water this would materially affect the results. Much of this water, however, finds its way back into the river. (See also description of station maintained by the United States Geological Survey at Modesto, p. 299.)

Monthly discharge of Tuolumne River at Modesto, Cal., for 1878–1884.

[Drainage area, 1,635 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.						
November[a]			65	0.04	0.04	3,868
December[a]			65	.04	.05	3,996
January			478	.29	.33	29,391
February	14,230		1,876	1.15	1.20	104,187
March	6,920	830	2,797	1.71	1.97	171,980
April	8,360	2,350	4,456	2.73	3.04	265,150
May	8,230	2,740	5,086	3.11	3.59	312,726
June	11,870	4,670	7,061	4.32	4.79	420,158
July	4,670	570	1,977	1.21	1.39	121,560
August			183	.11	.13	11,252
September			39	.02	.02	2,321
October			30	.02	.02	1,844
The year			2,010	1.23	16.57	1,450,000
1879–80.						
November			101	.06	.07	6,010
December	4,790	140	903	.55	.63	55,523
January	1,290	170	409	.25	.29	25,148
February	5,150	130	625	.38	.41	35,950
March	1,550	370	832	.51	.59	51,157
April	19,300	770	7,141	4.37	4.87	424,918
May	16,300	6,280	10,371	6.34	7.31	637,687
June	17,050	10,340	14,075	8.61	9.61	837,521
July	13,220	3,295	7,618	4.66	5.37	468,412
August	2,960	300	1,233	.75	.86	75,814
September			134	.08	.09	7,973
October			56	.03	.03	3,443
The year			3,620	2.22	30.13	2,630,000
1880–81.						
November			35	.02	.02	2,082
December	5,020		1,095	.67	.77	67,328
January	22,900	2,640	2,884	1.76	2.03	177,330
February	5,020	2,440	6,755	4.13	4.30	375,153
March	10,340	3,290	2,879	1.76	2.03	177,022
April	10,200	4,790	6,260	3.83	4.27	372,495
May	8,630	3,540	7,274	4.45	5.13	447,261
June	3,970	690	5,225	3.20	3.57	310,909
July	1,380		1,996	1.22	1.41	122,729
August			391	.24	.28	24,041
September			125	.08	.09	7,437
October			130	.08	.09	7,993
The year			2,920	1.79	23.99	2,090,000
1881–82.						
November			193	.12	.13	11,484
December[a]			620	.38	.44	38,122
January[a]			620	.38	.44	38,122
February	1,360		573	.35	.36	31,823
March	11,410	430	2,164	1.32	1.52	133,059
April	5,780	2,270	3,543	2.17	2.42	210,823
May	11,250	4,670	7,461	4.56	5.26	458,759
June	13,670	4,550	8,046	4.92	5.49	478,770

[a] Estimated from run-off of neighboring streams.

Monthly discharge of Tuolumne River at Modesto Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1881–82.						
July	5,650	890	2,745	1.68	1.94	168,783
August			574	.35	.40	35,294
September			255	.14	.16	13,388
October			873	.53	.61	43,678
The year			2,310	1.42	19.17	1,660,000
1882–83.[a]						
November			570	.35	.39	33,917
December			327	.20	.23	20,106
January			654	.40	.46	40,211
February			490	.30	.31	27,213
March			1,310	.80	.92	80,548
April			3,270	2.00	2.23	194,578
May			8,180	5.00	5.76	502,968
June			6,540	4.00	4.46	389,157
July			1,635	1.00	1.15	100,532
August			490	.30	.35	30,129
September			327	.20	.22	19,457
October			262	.16	.18	16,110
The year			2,000	1.23	16.60	1,450,000
1883–84.[a]						
November			327	.20	.22	19,457
December			327	.20	.23	20,106
January			410	.25	.29	25,210
February			490	.30	.32	28,185
March			6,540	4.00	4.61	402,129
April			7,360	4.50	5.02	437,950
May			7,360	4.50	5.20	452,548
June			8,180	5.00	5.58	486,743
July			6,540	4.00	4.61	402,129
August			1,635	1.00	1.15	100,532
September			327	.20	.22	19,457
October			245	.15	.17	15,064
The year			3,310	2.03	27.62	2,410,000

[a] Estimated from run-off of neighboring streams and from previous measurements.

TUOLUMNE RIVER AT MODESTO, CAL.

(United States Geological Survey station.)

This station was located half a mile south of the depot and at the railroad bridge at Modesto, Cal., and 12 miles above the mouth of Tuolumne River. It is the same location as the station maintained by the State Engineering Department of California from 1878–1884.

The gage was a vertical rod fastened on the south side of the central railroad pier. It was originally established by the Southern Pacific Co. in 1879, and continuous gage-height records were obtained.

Discharge measurements were made from the wagon bridge, 100 feet west of the railroad bridge.

The channel above and below the station is straight, but in the summer stages of the stream the current is very sluggish. The right bank shows indications of overflow.

The bed of the stream is believed to be fairly permanent, but there is backwater at high stages from San Joaquin River.

The computed discharges are rather poor on account of backwater effect from San Joaquin River, and poor plotting of discharge measurements. This station was finally abandoned in favor of the station at Lagrange.

List of discharge measurements made on Tuolumne River at Modesto, Cal., 1895–96.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1895.		*Feet.*	*Sec.-ft.*	1896.		*Feet.*	*Sec.-ft.*
Jan. 8	A. P. Davis	7.70	3,003	Apr. 14	J. A. Vogleson	7.90	3,745
Mar. 21	J. B. Lippincott	6.90	2,429	July 4	C. C. Babb	9.60	3,719
May 1	do	10.25	6,078	Sept. 5	H. S. Crowe	4.50	362
2	do	12.90	13,546	Oct. 31	J. B. Lippincott	3.92	375
June 27	do	13.00	9,308				
Aug. 27	do	4.00	294				
Nov. 30	do	3.42	213				

Daily gage height, in feet, of Tuolumne River at Modesto, Cal., for 1891–1897.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891.									
1	5.25	4.17	17.75	6.75	12.00	9.58	13.83	5.67	2.58
2	4.75	4.25	22.25	6.42	12.17	9.50	14.08	5.42	2.67
3	4.67	4.17	20.50	6.75	13.83	9.50	12.67	5.25	2.58
4	4.92	4.17	16.17	6.92	11.92	9.17	12.33	5.08	2.50
5	4.83	4.17	10.50	7.83	14.08	10.00	11.33	4.83	2.42
6	6.58	4.25	8.75	7.67	14.17	11.83	10.67	4.75	2.33
7	5.75	4.33	8.00	8.33	14.23	13.42	9.83	4.67	2.33
8	4.92	4.17	7.42	8.00	14.58	15.83	9.67	4.50	2.25
9	4.67	4.08	7.17	7.50	13.17	15.50	8.92	4.33	2.33
10	4.50	4.08	6.67	7.42	12.67	14.42	8.33	4.17	2.33
11	4.50	4.08	8.00	7.50	11.75	14.00	8.17	4.08	2.25
12	4.42	4.08	8.08	7.58	12.17	14.00	7.92	4.00	2.25
13	4.42	4.00	8.25	7.25	13.42	12.83	7.75	3.92	2.33
14	4.42	4.00	8.17	7.42	13.50	11.33	7.92	3.83	2.42
15	4.25	4.00	8.00	7.67	12.50	10.50	7.83	3.75	2.42
16	4.25	6.58	8.08	7.25	11.33	11.33	8.08	3.67	2.33
17	4.17	8.17	8.00	9.50	12.25	11.58	8.42	3.50	2.33
18	4.17	5.50	7.83	8.00	14.08	13.17	8.25	3.42	2.25
19	4.17	5.08	7.67	8.33	13.50	14.08	7.83	3.25	2.33
20	4.17	4.92	7.25	8.83	13.17	13.33	7.58	3.08	2.33
21	4.17	4.83	7.17	8.75	14.58	12.08	7.42	3.25	2.25
22	4.17	5.42	7.67	9.17	12.75	11.33	6.92	3.08	2.33
23	4.17	18.25	8.17	9.50	11.67	11.75	6.83	2.92	2.33
24	4.33	13.50	7.58	10.92	11.33	11.33	6.67	2.83	2.33
25	4.25	9.83	7.42	11.17	11.17	11.50	6.58	2.75	2.25
26	4.25	7.92	7.50	10.08	11.75	12.33	6.67	2.75	2.25
27	4.25	7.00	7.42	9.33	13.50	11.75	6.58	2.83	2.25
28	4.25	8.00	7.83	10.33	13.00	11.58	6.42	2.75	2.25
29	4.17	.....	7.42	10.92	12.08	12.08	6.33	2.67	2.25
30	4.08	.....	6.92	11.75	11.58	13.58	6.25	2.58	2.17
31	4.08	.....	6.83	.....	10.58	.....	5.92	2.67	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891-2.												
1	2.17	1.92	2.42	5.50	4.50	5.33	7.50	9.50	16.58	12.33	5.00	1.83
2	2.17	1.92	2.67	5.00	4.50	5.92	7.67	8.33	17.08	11.50	4.67	1.83
3	2.17	1.92	2.50	4.67	4.42	5.58	9.75	8.42	16.67	10.25	4.58	1.83
4	2.08	1.92	2.42	4.33	4.17	5.50	7.67	8.58	15.75	10.08	4.42	1.75
5	2.17	1.92	2.42	4.17	4.75	5.33	7.00	8.33	14.08	10.08	4.42	1.75
6	2.08	1.92	2.33	4.08	5.00	5.50	6.50	7.58	13.00	9.67	4.42	1.75
7	2.08	1.92	2.33	4.50	4.50	5.42	6.58	11.17	13.50	9.17	4.33	1.75
8	2.08	1.92	2.67	4.67	4.42	4.92	6.67	8.58	12.33	8.83	4.08	1.75
9	2.08	1.92	2.67	4.67	4.17	5.33	6.67	7.75	11.33	8.50	4.00	1.67
10	2.08	1.92	2.67	4.58	4.17	5.83	8.25	8.33	10.42	8.25	3.83	1.67

Daily gage height, in feet, of Tuolumne River at Modesto, Cal., for 1891–1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891–2.												
11	2.08	1.92	2.42	4.50	4.08	6.08	9.17	12.67	9.58	7.83	3.67	1.67
12	2.08	1.92	2.42	4.33	4.00	6.33	8.50	12.83	9.17	7.50	3.42	1.67
13	2.00	1.92	2.67	4.08	4.33	6.42	7.83	10.67	9.25	7.25	3.25	1.67
14	2.00	1.92	2.50	3.92	4.42	6.67	7.17	9.17	10.00	6.83	3.08	1.67
15	2.00	1.92	2.42	3.83	4.42	6.75	7.25	9.00	9.33	6.50	3.00	1.58
16	2.00	1.92	2.42	3.83	4.58	8.08	8.83	12.50	9.58	6.33	3.00	1.58
17	2.00	1.92	2.42	3.75	4.67	6.67	9.00	10.42	11.17	6.17	2.92	1.58
18	2.00	1.92	2.50	3.75	4.83	6.50	7.33	11.00	13.17	5.92	3.00	1.58
19	2.00	1.92	2.50	3.67	4.92	8.58	7.00	13.50	14.50	6.00	3.08	1.58
20	1.92	1.92	2.67	3.58	9.00	9.92	6.67	14.50	15.75	5.58	3.25	1.50
21	1.92	1.92	2.67	3.50	7.58	6.75	6.58	16.08	15.83	5.33	2.92	1.50
22	1.92	1.92	2.67	3.50	6.67	6.83	6.75	17.58	15.92	5.50	2.50	1.50
23	1.92	1.92	2.67	3.42	5.92	6.33	7.08	16.33	14.83	5.25	2.33	1.50
24	1.92	1.92	2.67	3.33	5.58	6.17	7.00	16.83	13.25	5.17	2.17	1.50
25	1.92	2.00	2.67	3.33	5.42	5.50	7.33	16.17	12.33	5.25	2.00	1.50
26	1.92	2.00	3.50	3.25	5.58	6.42	7.83	16.25	11.83	5.42	2.00	1.50
27	1.92	2.00	3.50	4.75	5.67	6.00	7.17	15.92	11.67	5.00	1.92	1.50
28	1.92	2.00	4.50	4.42	5.50	6.50	7.08	17.58	11.75	4.75	1.92	1.42
29	1.92	2.00	5.50	4.25	5.58	6.67	7.33	16.50	13.50	4.50	1.92	1.42
30	1.92	2.00	9.00	4.17	.....	10.33	7.25	17.25	13.50	4.25	1.83	1.42
31	1.92	.....	5.00	4.08	.....	11.50	.....	17.08	.....	3.92	1.83	.....
1892–3.												
1	1.42	1.67	18.58	8.17	12.00	7.00	10.33	8.33	14.67	13.92	7.42	4.92
2	1.42	1.67	10.50	7.83	9.08	6.75	10.50	8.67	15.75	13.50	7.33	4.75
3	1.42	1.75	7.67	7.67	9.00	6.75	10.33	9.25	16.92	14.33	7.33	4.58
4	1.42	1.75	12.42	7.50	8.17	6.67	10.17	10.17	17.58	14.42	7.33	4.50
5	1.42	1.75	8.17	7.25	13.98	6.75	9.83	10.50	17.83	13.92	7.17	4.33
6	1.42	1.67	7.25	7.17	10.08	6.67	12.17	10.00	18.08	13.42	6.92	4.08
7	1.42	1.58	6.17	7.08	7.00	6.42	10.42	10.58	17.92	12.33	6.75	4.00
8	1.42	1.58	5.42	6.83	8.00	6.00	9.58	10.75	17.58	11.75	6.58	3.92
9	1.42	1.50	5.08	6.58	19.08	6.17	9.08	11.83	16.67	12.25	6.33	3.92
10	1.42	1.50	4.83	6.50	16.00	5.83	8.75	12.67	17.00	12.58	6.17	3.83
11	1.42	1.42	4.25	6.33	11.00	5.75	8.67	14.17	17.42	12.50	6.00	3.75
12	1.50	1.42	4.08	6.17	10.00	10.75	8.25	15.25	17.83	11.58	5.92	3.50
13	1.58	1.42	3.92	6.00	10.08	7.75	8.08	15.75	18.00	10.92	5.83	3.33
14	1.67	1.42	3.75	5.33	9.08	6.83	8.00	16.58	16.17	10.50	5.75	3.17
15	1.58	1.42	3.67	5.58	.....	13.50	7.92	16.42	14.08	10.17	5.58	3.17
16	1.58	1.33	3.58	6.50	.....	9.83	8.33	16.58	14.33	10.33	5.50	3.08
17	1.58	1.33	3.50	10.58	7.83	8.17	8.75	15.17	15.58	10.58	5.42	3.08
18	1.58	1.33	3.33	7.83	7.67	6.83	8.50	15.00	15.75	10.50	5.25	3.00
19	1.50	1.50	3.33	6.67	7.50	7.83	8.58	13.42	15.17	10.33	5.08	3.00
20	1.50	1.42	3.08	6.50	7.50	10.83	8.75	12.25	14.33	10.42	5.00	3.08
21	1.50	1.42	3.25	6.33	7.42	22.83	9.00	10.00	13.58	10.17	4.92	3.00
22	1.50	1.42	3.17	6.08	7.33	15.83	9.67	10.50	13.67	9.92	4.83	2.92
23	1.50	1.42	3.25	6.00	7.33	11.75	11.58	11.67	14.58	9.75	4.83	2.83
24	1.50	1.58	11.75	6.00	7.25	9.75	10.42	13.42	13.50	9.58	4.75	2.92
25	1.50	1.67	24.83	5.08	7.25	8.50	9.17	12.50	13.08	9.42	4.67	2.83
26	1.50	1.67	19.50	6.17	7.25	9.00	8.75	11.42	13.67	9.58	4.83	2.83
27	1.50	1.75	16.58	7.08	7.25	9.17	8.75	10.92	13.38	9.00	5.25	2.75
28	1.50	1.83	13.67	9.00	7.17	9.75	8.92	11.08	13.58	8.83	5.42	2.75
29	1.50	3.50	10.92	7.08	.....	10.67	8.75	12.25	13.67	8.58	5.25	2.67
30	1.58	11.83	9.50	7.08	.....	11.33	8.17	13.42	13.08	7.75	5.17	2.67
31	1.58	.....	8.75	18.00	.....	10.42	.....	14.00	.....	7.58	4.92	.....
1893–4.												
1	2.67	1.75	5.50	3.83	5.33	7.07	8.33	8.92	15.50	10.67	4.92	3.83
2	2.58	1.75	6.42	3.92	5.33	7.25	8.58	9.67	13.83	10.42	4.83	3.33
3	2.58	1.67	5.58	4.68	5.17	7.33	9.25	9.58	13.33	9.67	4.75	3.25
4	2.50	1.67	5.92	4.75	5.17	6.67	9.08	9.83	13.50	9.83	4.67	3.17
5	2.50	1.67	4.58	4.50	5.33	6.50	9.25	10.83	11.75	9.92	4.58	3.00
6	2.50	1.67	4.33	4.50	5.00	6.42	9.58	12.17	11.83	9.25	4.50	2.83
7	2.42	1.75	4.17	4.08	5.00	6.50	10.25	13.83	10.83	9.17	4.42	2.75
8	2.42	1.83	3.92	4.17	5.00	6.42	10.58	14.67	9.83	9.00	4.25	2.67
9	2.33	2.17	3.43	4.17	4.92	6.25	10.92	15.75	9.67	8.50	4.00	2.50
10	2.33	2.08	3.17	4.08	15.50	6.33	11.83	16.17	9.75	8.50	3.92	2.33
11	2.33	2.00	3.08	4.00	6.92	6.50	13.08	15.83	10.08	8.25	3.75	2.17
12	2.33	2.00	3.00	4.00	5.92	6.42	11.58	16.67	9.50	8.08	3.67	2.08
13	2.42	2.17	3.17	4.25	5.75	7.08	10.92	15.17	8.67	7.83	3.58	2.00
14	2.42	2.00	3.42	4.42	5.50	7.42	11.08	14.25	8.67	7.50	3.58	2.00
15	2.33	1.83	3.08	4.58	5.42	7.50	11.50	14.83	9.67	7.42	3.42	1.92

Daily gage height, in feet, of Tuolumne River at Modesto, Cal., for 1891–1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1893–94.												
16	2.33	1.75	2.92	14.42	6.58	7.50	10.50	12.33	10.08	7.17	3.25	1.92
17	2.33	1.75	3.00	7.50	5.00	8.83	9.42	11.17	11.25	6.92	3.17	1.83
18	2.25	1.67	3.00	6.00	5.67	7.75	8.67	11.08	11.83	6.75	3.17	1.75
19	2.25	1.67	2.92	6.25	7.58	7.50	8.83	11.92	11.92	6.50	3.08	1.67
20	2.25	1.58	2.83	5.58	21.83	7.42	10.33	11.33	9.83	6.42	3.08	1.67
21	2.17	1.50	2.83	16.17	23.00	6.83	11.33	10.67	9.92	6.00	3.00	1.58
22	2.17	1.50	2.67	7.42	10.83	6.50	11.17	10.50	10.17	5.92	3.00	1.58
23	2.17	1.42	2.67	6.58	9.58	6.33	10.75	10.58	9.83	5.92	2.92	1.50
24	2.17	1.33	3.50	6.33	7.67	6.33	10.50	12.67	10.50	5.67	2.92	1.50
25	2.08	1.50	3.67	5.83	7.33	6.50	9.75	14.00	10.67	5.58	2.83	1.42
26	2.00	1.67	3.33	5.50	7.17	6.83	11.17	15.08	10.58	5.50	2.83	1.42
27	2.00	2.08	3.67	5.42	6.92	7.50	10.08	14.00	10.17	5.42	2.75	1.33
28	2.00	2.75	3.92	5.42	6.92	7.50	8.75	13.17	10.33	5.50	2.75	1.33
29	1.83	7.50	3.83	5.17	.....	7.92	10.17	11.17	9.83	5.25	2.92	1.25
30	1.83	6.08	3.75	5.25	.....	8.50	8.17	11.42	10.42	5.08	4.08	1.58
31	1.83	.....	3.58	5.33	.....	8.67	.....	13.75	.....	4.92	3.83	.....
1894–95.												
1	1.50	3.25	1.83	6.17	5.67	7.50	8.33	10.33	10.50	10.83	6.00	3.83
2	1.58	3.08	1.75	5.92	5.75	7.75	8.08	15.00	9.92	10.50	5.92	3.83
3	1.67	3.00	1.58	5.92	5.75	7.83	9.17	13.17	10.08	10.50	5.75	3.75
4	1.67	2.75	1.58	5.83	5.75	7.50	8.67	11.50	11.58	10.33	5.58	3.67
5	1.75	2.67	1.75	18.92	5.83	7.33	8.42	11.08	13.33	9.67	5.50	3.67
6	1.83	2.50	1.83	12.75	5.75	7.50	8.00	13.33	14.08	9.33	5.50	3.58
7	1.75	2.50	3.50	8.67	5.67	7.67	7.92	14.83	15.08	9.33	5.50	3.58
8	1.83	2.42	4.58	7.50	5.67	7.58	8.50	15.08	15.42	9.50	5.42	3.50
9	1.83	2.33	6.00	10.08	5.92	7.75	8.00	15.83	14.50	9.83	5.42	3.42
10	1.92	2.33	6.58	8.83	6.00	7.83	8.42	15.17	13.83	9.92	5.33	3.33
11	1.58	2.25	5.83	7.75	6.17	8.00	8.58	14.50	13.17	9.33	5.33	3.33
12	1.58	2.08	5.33	7.42	18.42	7.83	8.83	15.08	13.83	9.08	5.25	3.50
13	1.58	2.00	4.42	6.92	20.75	7.50	9.00	16.75	14.75	8.67	5.25	9.92
14	1.58	1.92	4.08	9.08	13.42	7.33	10.08	17.33	14.50	8.58	5.17	6.58
15	1.50	1.92	3.75	8.17	9.33	7.00	9.50	17.42	13.42	8.42	5.08	6.17
16	1.67	1.83	3.42	10.50	8.50	6.50	8.67	17.83	12.33	8.42	4.92	5.50
17	1.67	1.75	3.33	13.58	8.00	6.50	9.50	17.92	11.50	8.33	4.92	5.33
18	1.58	1.75	3.50	16.50	7.50	6.25	10.17	18.00	10.83	8.17	4.83	4.92
19	1.58	1.67	6.42	15.33	7.25	6.17	10.75	17.75	11.25	7.67	4.83	4.42
20	1.50	1.58	17.50	10.75	7.33	6.25	11.50	17.58	11.58	7.33	4.75	4.08
21	2.50	1.58	7.08	8.67	7.58	6.33	12.08	16.17	12.17	7.33	4.75	3.92
22	3.50	1.58	15.17	8.50	7.67	6.17	12.50	15.33	13.25	7.42	4.67	3.83
23	4.75	1.50	11.83	12.58	8.75	6.83	12.17	14.42	12.83	7.17	4.58	3.75
24	4.17	1.50	7.67	8.75	8.50	6.67	12.25	13.75	14.17	7.08	4.50	3.67
25	5.67	1.50	7.33	7.67	8.67	6.75	11.67	13.83	13.83	6.83	4.42	3.58
26	5.25	1.50	6.17	6.92	8.33	6.92	12.17	14.08	13.42	6.67	4.33	3.50
27	5.17	1.50	5.75	6.92	7.67	7.33	12.08	16.50	12.75	6.58	4.25	3.50
28	4.58	1.42	10.75	6.50	7.42	12.17	13.50	14.83	12.67	6.33	4.08	3.42
29	4.50	1.42	9.33	6.25	.....	14.08	12.42	12.50	12.17	6.25	4.00	3.42
30	3.92	1.75	8.25	6.00	.....	10.67	10.33	11.50	11.67	6.08	3.92	3.33
31	3.50	.....	6.92	5.83	.....	8.33	.....	10.83	.....	6.00	3.92	.....
1895–96.												
1	3.33	3.17	3.50	3.80	6.30	6.00	7.50	7.80	16.40	10.30	5.30	7.40
2	3.25	3.50	3.67	3.80	6.10	5.60	7.10	7.80	16.90	9.90	5.00	6.00
3	3.25	3.42	3.67	3.70	5.90	5.60	7.20	7.70	17.00	9.50	4.80	5.30
4	3.17	3.42	3.50	3.60	5.80	5.30	7.10	7.90	14.80	9.60	4.80	4.90
5	3.17	3.42	3.58	3.60	5.70	5.20	6.90	8.10	13.80	9.50	4.90	4.80
6	3.17	3.50	3.67	3.60	5.50	5.10	6.70	8.70	14.30	12.50	4.90	4.40
7	3.17	3.50	3.58	3.70	5.30	5.20	7.20	7.80	15.30	10.70	4.70	4.30
8	3.17	3.58	3.58	3.70	5.30	5.30	6.80	7.50	17.10	10.00	4.70	4.80
9	3.17	3.58	3.50	3.70	5.30	5.30	6.70	7.40	17.60	10.10	4.60	4.70
10	2.17	3.58	3.58	3.70	5.10	5.40	7.20	7.10	17.60	10.30	4.50	4.60
11	2.17	3.67	3.50	3.70	5.30	5.60	7.20	7.00	16.30	9.90	4.60	4.40
12	2.17	3.67	3.42	3.80	5.10	5.80	6.70	7.70	16.80	10.50	4.50	4.30
13	2.17	3.58	3.42	3.90	5.10	6.00	6.80	7.40	16.80	9.70	4.50	4.10
14	2.17	3.58	3.25	3.90	5.20	6.30	7.70	7.70	16.80	9.30	4.40	3.90
15	2.17	3.42	3.08	4.30	5.00	6.60	10.20	8.20	16.70	8.80	4.30	3.90
16	2.17	3.50	3.67	4.10	5.00	6.60	8.00	8.50	16.70	8.30	4.20	3.90
17	2.17	3.42	3.75	4.40	5.00	6.60	7.40	8.10	16.60	8.20	4.20	3.70
18	2.17	3.42	3.75	10.80	5.20	6.40	6.80	8.40	16.70	8.00	4.10	3.70
19	2.17	3.42	3.75	15.30	5.30	6.40	6.70	8.30	15.00	7.90	4.10	3.70
20	2.17	3.50	3.83	9.20	5.30	6.60	6.70	7.70	13.90	7.40	4.10	3.60

Daily gage height, in feet, of Tuolumne River at Modesto, Cal., for 1891–1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895–96.												
21	2.17	3.42	3.92	15.20	5.40	7.80	6.40	7.70	13.70	7.20	4.10	3.50
22	2.17	3.33	4.75	12.80	5.40	7.50	6.50	8.50	13.80	7.00	4.00	3.70
23	2.17	3.33	4.33	10.30	5.10	8.00	7.00	8.50	13.30	6.80	4.00	3.80
24	2.17	3.33	4.17	8.10	5.10	8.20	6.80	9.00	13.50	6.70	4.00	3.80
25	2.17	3.25	4.00	6.90	5.00	8.00	17.70	10.40	13.50	6.40	4.00	4.00
26	2.17	3.25	3.92	7.00	5.40	8.40	11.70	11.90	12.30	6.30	4.00	3.90
27	2.17	3.33	4.08	9.30	5.50	15.10	10.70	13.40	11.70	6.70	4.00	3.80
28	2.17	3.33	4.17	16.70	5.50	11.90	9.70	14.70	11.50	6.50	3.90	3.80
29	2.17	3.50	3.92	9.90	5.80	9.50	8.30	16.70	11.70	6.10	3.80	3.80
30	2.17	3.67	3.83	8.30	.....	8.40	8.40	17.60	11.00	5.80	3.80	3.70
31	2.17	.....	3.75	6.80	.....	8.00	.....	16.10	.....	5.60	4.70	.....
1896–97.												
1	3.70	3.80	5.20	6.50	11.97	7.42	7.92	13.42	14.37	8.17	4.66	3.70
2	3.60	3.80	5.10	5.63	18.00	8.38	8.25	13.46	13.00	8.42	4.58	3.66
3	3.60	3.80	5.00	5.17	11.79	7.58	7.50	12.33	11.96	8.58	4.54	3.58
4	3.50	3.80	5.10	4.83	9.17	7.46	7.46	14.17	12.04	8.62	4.50	3.54
5	3.50	3.70	5.00	4.79	13.88	6.96	7.71	15.92	12.08	8.17	4.46	3.50
6	3.50	3.70	4.90	4.71	19.25	7.33	7.88	16.54	12.25	7.70	4.37	3.46
7	3.50	3.70	4.80	4.63	12.25	9.83	8.46	16.35	12.62	7.54	4.29	3.38
8	3.30	3.70	4.70	4.67	12.50	8.17	8.92	15.08	12.83	7.12	4.21	3.38
9	3.30	3.80	4.60	4.58	9.29	7.50	9.21	14.54	12.43	6.75	4.12	3.33
10	3.30	3.80	4.70	4.56	8.25	7.25	9.83	13.33	12.08	6.58	4.08	3.33
11	3.30	7.20	4.70	4.48	7.63	7.13	10.46	13.29	12.17	6.50	4.08	3.33
12	3.30	5.70	4.60	4.44	7.33	6.83	11.21	14.29	10.87	6.50	4.17	3.33
13	3.20	5.20	4.60	4.19	7.13	6.63	11.83	15.00	10.66	6.87	4.17	3.25
14	3.20	4.70	8.00	4.75	6.92	6.54	11.96	15.21	11.25	6.83	4.08	3.25
15	3.10	4.50	6.40	5.79	6.46	6.46	11.50	15.79	10.92	6.83	3.96	3.25
16	3.10	4.40	6.30	5.04	6.46	6.54	12.96	15.04	9.42	6.58	3.92	3.25
17	3.00	4.40	5.50	4.88	8.83	6.73	13.54	14.67	8.83	6.70	3.92	3.17
18	3.00	4.40	5.30	4.56	8.63	7.42	14.21	14.04	8.33	6.37	3.83	3.17
19	3.00	4.70	5.20	4.46	8.88	9.86	14.25	13.58	7.92	6.54	3.83	3.17
20	3.00	4.90	4.80	4.38	9.78	8.04	13.04	14.79	7.66	5.83	3.92	3.25
21	3.20	4.90	4.60	4.29	8.58	7.50	11.42	15.79	8.08	5.83	3.83	3.25
22	3.20	5.40	4.60	4.21	7.71	7.08	11.08	16.33	8.12	5.42	3.83	3.17
23	3.20	5.30	4.40	4.13	7.42	6.75	10.50	17.29	8.04	5.25	3.83	3.17
24	3.20	7.00	4.30	4.17	7.21	6.81	9.92	17.75	8.12	5.17	3.96	3.17
25	3.20	11.70	4.30	4.17	7.00	7.08	9.83	17.92	8.17	5.12	4.08	3.17
26	3.20	8.70	4.30	4.13	7.00	7.67	10.83	16.96	8.04	5.00	4.17	3.13
27	3.40	6.50	4.70	4.13	7.25	7.88	11.92	15.46	7.42	4.96	3.96	3.17
28	4.20	5.70	4.90	4.04	7.50	7.75	13.21	14.54	7.58	4.88	3.87	3.17
29	4.00	5.50	5.80	8.45	.....	12.67	13.42	15.08	7.66	4.79	3.79	3.17
30	3.80	5.30	5.50	6.50	.....	9.42	13.25	15.00	7.92	4.75	3.75	3.17
31	3.80	.....	6.00	6.54	.....	8.25	.....	15.04	.....	4.66	3.75	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1897.				1897.				1897.			
1	3.13	4.12	4.58	11	3.21	3.96	6.12	21	3.66	2.92	4.46
2	3.21	4.25	4.75	12	3.29	4.08	5.62	22	3.58	8.08	4.37
3	3.25	4.37	4.58	13	3.37	4.04	5.54	23	3.54	7.87	4.50
4	3.25	4.08	4.54	14	3.37	3.96	6.04	24	3.37	7.08	4.50
5	3.17	4.33	4.50	15	3.29	4.12	5.87	25	3.96	7.29	4.33
6	3.13	4.12	4.25	16	3.37	4.12	5.58	26	4.50	6.25	4.25
7	3.25	4.12	4.48	17	3.62	4.04	5.17	27	4.42	5.58	4.12
8	3.17	4.04	4.21	18	3.79	3.92	5.00	28	4.42	5.12	4.04
9	3.29	4.04	9.66	19	3.96	3.87	4.87	29	4.25	5.04	4.04
10	3.25	4.04	7.33	20	3.87	3.83	4.54	30	4.12	4.75	4.04
								31	4.08	.....	4.04

NOTE.—Gage heights for September, October, and November, 1895, are of doubtful value, as the water fell below the bottom of the gage.

Rating tables for Tuolumne River at Modesto, Cal.

Jan. 1 to Dec. 31, 1895.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
3.00	170	6.00	1,550	9.00	4,500	13.00	9,375
3.50	225	6.50	1,950	9.50	5,120	14.00	10,650
4.00	300	7.00	2,400	10.00	5,740	15.00	12,000
4.50	550	7.50	2,875	10.50	6,335	16.00	13,350
5.00	850	8.00	3,350	11.00	6,930	17.00	14,700
5.50	1,170	8.50	3,925	12.00	8,125	18.00	16,000

Jan. 1 to Dec. 31, 1896.

3.0	180	8.0	3,560	12.5	8,735	17.0	14,040
3.5	220	8.5	4,080	13.0	9,320	17.5	14,635
4.0	390	9.0	4,600	13.5	9,910	18.0	15,230
4.5	600	9.5	5,200	14.0	10,500	18.5	15,825
5.0	950	10.0	5,800	14.5	11,090	19.0	16,420
5.5	1,230	10.5	6,395	15.0	11,680	19.5	17,020
6.0	1,610	11.0	6,990	15.5	12,270	20.0	17,620
6.5	2,060	11.5	7,570	16.0	12,860	20.5	18,220
7.0	2,550	12.0	8,150	16.5	13,450	21.0	18,820
7.5	3,010						

Monthly discharge of Tuolumne River at Modesto, Cal., for 1895–96.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1895.				
January	16,130	1,398	4,828	296,900
February	19,650	1,322	3,915	217,430
March	10,785	1,710	3,165	194,610
April	10,012	3,255	5,824	346,570
May	16,000	6,097	11,798	725,400
June	12,530	5,616	9,163	545,110
July	6,092	1,550	3,831	235,540
August	1,550	285	848	52,125
September	5,616	200	615	36,600
The period				2,660,000
1895-96.				
October	200	120	152	9,346
November	500	210	255	14,985
December	730	180	283	17,405
January	13,686	246	3,080	189,370
February	1,880	950	1,182	68,007
March	11,798	1,006	2,725	167,578
April	14,873	1,970	3,577	212,828
May	14,754	2,550	5,180	318,500
June	14,754	6,990	11,648	693,104
July	8,735	1,306	4,121	253,408
August	1,118	300	575	35,392
September	2,918	220	574	34,191
The year	14,873	120	2,779	2,010,000
1896.				
October	474	180	224	13,797
November	7,802	273	1,210	72,012
December	3,560	516	1,028	63,247

NOTE.—In the original records published in Bulletin 140 and the Eighteenth Annual Report the drainage area used for the station is in error.

CHERRY RIVER AT ELEANOR TRAIL CROSSING, CAL.

Cherry River is a tributary of the Tuolumne and enters that stream 12½ miles below Hetch Hetchy Valley. The area drained is 130 square miles.

A gaging station was established by J. B. Lippincott for the city of San Francisco at the point where Eleanor trail crosses the river, May 26, 1901. The following meter measurements and gage heights are given by the courtesy of Mr. C. E. Grunsky, former city engineer of San Francisco, Cal.:

Discharge measurements of Cherry River at Eleanor trail crossing, Cal., 1901–2.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1901.		*Feet.*	*Sec.-feet.*	1901.		*Feet.*	*Sec.-feet.*
July 8	C. A. Miller	11.40	915	Sept. 22	W. W. Cockins, jr.	7.06	4.5
17	do	10.40	510	26	do	9.05	141
Aug. 9	W. W. Cockins, jr.	8.75	112	Oct. 3	do	8.96	120
19	do	9.10	132	10	do	8.00	43
20	do	8.40	107				
24	do	8.10	43	1902.			
Sept. 1	do	7.80	17.5	Aug. 30[a]	E. T. Perkins		4.4
7	do	7.70	6.1	30	do		6
17	do	7.00	4.3				

[a] Measurement made 1,500 feet below trail crossing.

Daily gage height, in feet, of Cherry River at Eleanor trail crossing, Cal., for 1901.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Day.	May.	June.	July.	Aug.	Sept.	Oct.
1	.....	12.3	13.2	9.4	7.8	9.0	16	.....	11.7	10.0	8.9	7.0	.....
2	.....	12.6	13.0	9.3	7.8	9.0	17	.....	11.5	10.4	9.0	7.0	.....
3	.....	12.85	12.4	9.2	7.8	9.0	18	.....	11.0	10.4	9.0	7.0	.....
4	.....	12.0	12.4	9.1	7.7	8.8	19	.....	12.0	10.35	9.1	7.0	.....
5	.....	11.6	12.4	9.1	7.7	8.7	20	.....	12.0	10.28	8.4	7.0	.....
6	.....	11.2	12.4	9.0	7.7	8.4	21	.....	12.4	10.2	8.4	7.1	.....
7	.....	12.0	12.0	8.9	7.7	8.3	22	.....	12.4	10.13	8.3	7.1	.....
8	.....	12.7	11.4	8.8	7.7	8.3	23	.....	12.3	10.05	8.2	7.5	.....
9	.....	12.0	11.4	8.8	7.7	8.1	24	.....	12.25	9.98	8.1	8.0	.....
10	.....	11.65	11.0	8.8	7.6	8.1	25	.....	12.5	9.9	8.1	8.5	.....
11	.....	11.5	11.0	8.8	7.5	8.1	26	12.2	12.5	9.83	8.1	9.1	.....
12	.....	11.5	10.0	8.8	7.4	8.0	27	12.2	12.5	9.75	8.0	9.0	.....
13	.....	11.25	10.0	8.9	7.3	8.0	28	12.2	13.0	9.68	8.0	9.0	.....
14	.....	11.5	10.0	8.9	7.2	7.8	29	12.1	13.5	9.6	7.9	9.0	.....
15	.....	11.7	10.0	8.9	7.1	7.9	30	12.2	14.0	9.53	7.9	9.0	.....
							31	12.3	.....	9.45	7.8	.....	.....

Monthly discharge of Cherry River at Eleanor trail crossing, Cal., for 1901.

[Drainage area, 130 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
June	[a] 1,950	750	1,202	9.25	10.32	71,525
July	1,630	218	653	5.02	5.78	40,145
August	206	17	93	.72	.83	5,718
September	145	4	32	.25	.28	1,904

[a] Approximate.

ELEANOR CREEK AT ELEANOR TRAIL CROSSING, CAL.

Eleanor Creek is a tributary of Cherry River, and enters the stream 6 miles above its mouth. The elevation of the outlet of Lake Eleanor is 4,655 feet above sea level. The drainage area above the gaging station is 81 square miles, and consists of high granite mountains culminating in Richardson Peak, elevation 9,845 feet; Haystack Peak, elevation, 9,966 feet; and an unnamed peak, elevation, 10,510 feet. The average elevation of the drainage basin is probably 7,500 feet.

A gaging station was established by J. B. Lippincott, at the outlet of Lake Eleanor, June 1, 1901, for the city of San Francisco. The following meter measurements and gage heights are given by the courtesy of Mr. C. E. Grunsky, former city engineer of San Francisco, Cal.:

Discharge measurements of Eleanor Creek at Eleanor trail crossing, Cal., 1901.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1901.		*Feet.*	*Sec.-ft.*	1901.		*Feet.*	*Sec.-ft.*
June 10	C. A. Miller	8.67	411	Aug. 23	W. W. Cockins, jr.	6.47	32
22	do	9.76	793	27	do	6.26	17.8
July 8	J. B. Lippincott	8.57	310	30	do	6.05	13.9
16	C. A. Miller	7.92	263	Sept. 6	do	5.90	6.22
18	do	7.80	225	14	do	5.70	4.08
27	W. W. Cockins, jr.	7.45	145	21	do	5.72	5.02
Aug. 3	do	7.10	84	26	do	5.85	5.77
10	do	6.92	75	Oct. 3	do	6.40	34.5
17	do	6.48	30	10	do	6.21	21.2
19	do	6.68	42	14	do		15

Daily gage height, in feet, of Eleanor Creek at Eleanor trail crossing, Cal., for 1901.

Day.	June.	July.	Aug.	Sept.	Oct.	Day.	June.	July.	Aug.	Sept.	Oct.
1	11.0	9.1	7.3	6.2	6.3	16	10.0	7.92	6.5	5.7	
2	11.08	9.0	7.2	6.1	6.4	17	10.0	7.84	6.5	5.7	
3	10.5	9.0	7.1	6.1	6.4	18	10.0	7.8	6.6	5.7	
4	10.2	9.0	7.1	6.0	6.4	19	10.0	7.85	6.7	5.7	
5	10.1	8.5	7.1	6.0	6.3	20	9.8	7.85	6.6	5.7	
6	10.0	8.5	7.0	5.9	6.3	21	9.8	7.85	6.6	5.7	
7	9.5	8.5	7.0	5.9	6.3	22	9.77	7.7	6.5	5.8	
8	9.0	8.57	6.9	5.9	6.25	23	9.7	7.7	6.5	5.8	
9	9.1	8.6	6.9	5.9	6.2	24	9.7	7.6	6.4	5.8	
10	8.67	8.6	6.92	5.9	6.2	25	9.7	7.6	6.4	5.8	
11	8.6	8.6	6.9	5.9	6.2	26	9.7	7.5	6.3	5.85	
12	8.6	8.6	6.8	5.9	6.2	27	9.4	7.45	6.3	5.9	
13	8.6	7.9	6.7	5.7	6.15	28	9.0	7.45	6.3	6.0	
14	10.0	7.9	6.6	5.7	6.1	29	9.0	7.45	6.2	6.1	
15	10.0	7.9	6.5	5.7	6.1	30	9.5	7.4	6.2	6.2	
						31		7.4	6.2		

Monthly discharge of Eleanor Creek at Eleanor trail crossing, Cal., for 1901.

[Drainage area, 81 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
June	1,834	374	824	10.10	11.35	49,031
July	510	138	275	3.40	3.92	16,909
August	122	18	52	.64	.74	3,197
September	18	5	8	.10	.11	476

JAWBONE CREEK NEAR TUOLUMNE, CAL.

This station, which is located 1½ miles above the junction with Tuolumne River at the Jawbone ranger station in the Stanislaus National Forest, about 12 miles southeast of Tuolumne, in the NE. ¼ SE. ¼ sec. 33, T. 1 N., R. 18 E., was established September 13, 1910.

No tributaries enter below the gage. A small ditch takes water above the station for irrigation at the ranger station.

The vertical staff gage is fastened to a cottonwood tree on the right bank about 100 feet below the trail crossing.

At high stages discharge measurements may be made from an old bridge about 1,000 feet below.

Both banks are high and wooded and not subject to overflow. The bed of the stream is composed of gravel and bowlders and the current is swift.

This station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of Jawbone Creek near Tuolumne, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-feet.*
Sept. 13	J. E. Stewart	0.20	2.9
Oct. 20	H. J. Tompkins	.25	4.1
Dec. 2	do	.30	46
1911.			
Jan. 29	Egbert and Clark	2.78	247
June 17	H. J. Tompkins	.65	46
Aug. 29	do	— .25	6.9
1912.			
Apr. 21	H. J. Tompkins	.61	18

Daily gage height, in feet, of Jawbone Creek near Tuolumne Cal., for 1910–1912.

Day.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.													
1				0.29		1.60	0.25	1.48	1.45	1.10	0.26		
2			0.25	.30		1.20	.22	1.50	1.45	1.08	.25		−0.35
3			.25	.65		1.00	.68	1.55	1.45	1.08	.23		− .35
4			.27	.52	0.30	1.00	.90	1.45	1.45	1.00	.20		− .35
5			.28		.30	.80	.92	2.20	1.52	1.00	.19		− .35
6			.29		.30	.70	.90	2.10	1.45	1.00	.16		− .34
7			.29	.35	.29	.60	1.35	1.80	1.45	1.00	.15		− .34
8			.28	.32	.29	.52	1.75	1.70	1.35	.97	.12		− .35
9			.29	.32	.31	.48	1.75	1.80	1.40	.93	.12		− .35
10				.40	.70	.42	1.75	1 70	1.35	.89	.80		− .36
11				.70	.52	.45	1.38	1.60	1.38	.87	.50		− .37
12		0.40		.40	.50	.45	1.20	1.50	1.35	.84			− .37
13	0.20		.32	.35	.75	.42	1.10	1.40	1.35	.82	.60		− .37
14			.31	.32	.80	.45	1.02	1.40	1.32	.78			− .38
15			.30	.32	.81	.40	1.00	1.38	1.28	.70	.20		− .38
16		.30	.30	.31	.65	.40	1.00	1.40	1.25	.70			− .38
17			.30		.60	.40	1.03	1.42	1.20	.68			− .38
18			.41		.55	.38	1.02	1.43	1.20	.63			− .38
19					.50		1.07	1.44	1.20	.60			− .38
20		.25			1.20	.30	1.09	1.50	1.22	.55			− .39
21					1.20	.26	1.10	1.45	1.25	.52			− .39
22					.92	.25	1.05	1.45	1.30	.50			− .39
23					.80	.28	1.10	1.50	1.30	.47			− .36
24					2.10	.25	1.10	1.55	1.25	.44		−0.24	− .38
25					2.0	.20		1.60	1.25	.41		− .25	− .35
26		.27			1.32	.80	1.30	1.60	1.20	.40		− .25	− .36
27					1.10	.20	1.20	1.55	1.15	.38		− .25	− .37
28			.30		1.00	.15	1.20	1.45	1.15	.35		− .25	− .33
29			.30		3.15		1.25	1.45	1.12	.32		− .27	− .27
30		.25	.29		3.72		1.35	1.45	1.10	.30		− .30	− .25
31					3.00		1.40		1.10			− .35	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	−0.23	0.11			0.37			0.92	
2	− .18	.11	0.30		.34				0.61
3		.10	.30	0.34					
4		.10	.35	.42	.33			.88	
5		.11	.35	.40	.33				
6	− .18	.10	.44					.84	
7		.10							.32
8			.35		.32				
9			.33		.32				.29
10			.34		.32				.30
11	− .06	.32	.30		.32			.86	
12	− .01	.31	.31		.32			.87	.30
13	.00	.31						.90	.26
14	.02	.30	.32		.31				
15					.30			.87	.10
16	.01	.35			.31				.05
17	.00	.33		.40				.89	
18	.06	.33		.37				.90	
19	.07							.84	
20	.09		.48		.31	0.62	0.62	.86	− .06
21	.10	.30	.48	.35	.29	.56	.61	.87	− .06
22	.07	.31		.34	.25		.60		− .08
23							.61	.83	.00
24	.08		.38		.26	.57	.70	.79	− .06
25	.08		.37			.57	.64	.90	− .15
26	.08		.42	.34	.26	.56	.75	.87	− .20
27			.34		.25		.70	.81	− .20
28	.14		.39	.40	.25				− .25
29	.13		.42		.25		1.01	.75	− .28
30			.42				.95		
31				.38				.64	

NOTE.—Water below zero of gage July 16 to Aug. 23, 1911. Low-water section of gage installed Aug. 24, 1911. There was ice at the station during part of January, February, and latter part of December, 1911.

CORRAL CREEK NEAR GROVELAND, CAL.

This station, which is located at the Clavey trail crossing, 1 mile west of the Jawbone ranger station on Jawbone Creek, in Stanislaus National Forest, 2 miles above the junction with Tuolumne River and 15 miles northeast of Groveland, was established October 21, 1910.

The gage is a vertical staff fastened to an alder on the right bank of the trail crossing.

Discharge measurements are made by wading near the gage.

The channel, which is composed of bowlders and gravel, is rough. The left bank is low and may be overflowed.

The station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of Corral Creek near Groveland, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-feet.*
Oct. 21	H. J. Tompkins	0.60	1.0
Dec. 2	do	.70	1.0
1911.			
June 18	H. J. Tompkins	.85	2.8
Aug. 29	do	.70	1.1
1912.			
Apr. 21	H. J. Tompkins	1.05	3.2

Daily gage height, in feet, of Corral Creek near Groveland, Cal., for 1910–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1			0.7		2.70				0.95			
2							1.20					
3									.92		0.77	
4		0.62			1.50	1.60	1.15					
5				0.70								
6		.64										
7									.90	0.82		
8					1.20	2.10			.90			0.72
9					1.15		1.50	1.00		.80		
10									.87	.72		
11			.9							.79		
12										.82		
13		.68								.82		
14				1.10								
15				1.00	1.10						.71	
16				.82			1.10				.72	
17								.80				.72
18				.72	1.10				.85	.79		.72
19										.80		
20				2.00	1.50					.78		
21				1.20	1.10					.80		
22				.98								
23						1.40				.78		
24				2.50		1.40					.74	
25							1.10	.95		.74		
26						1.30						
27												
28				1.10		1.20			.82	.74	.70	
29							1.05			.78	.70	
30							1.08			76		
31												

Daily gage height, in feet, of Corral Creek near Groveland, Cal., for 1910–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1									0.85
2									
3				0.86					
4			0.80						
5			.80	.89	0.83				
6	0.78	0.76	.85						
7			.80						
8			.79						
9			.79						
10									
11									
12	.78		.78						
13									
14									
15	.75	.80					1.33		
16									
17		.80		.88					
18						1.22	1.13		
19							1.10		
20		.79							
21			.80	.85			1.05		
22		.77	.79						.75
23									
24									
25									
26				.87		1.05			
27							1.02		
28	.77								.70
29									
30									
31				.90					

SOUTH FORK OF TUOLUMNE RIVER NEAR GROVELAND, CAL.

This station, which is located at the South Fork trail bridge, in Stanislaus National Forest, one-fourth mile above the junction with Tuolumne River and about 10 miles east of Groveland, was established September 13, 1910.

The Middle Fork of the Tuolumne enters about 2½ miles above the station. At the Hardin ranch, about 7 miles above the mouth, a ditch originally built for mining diverts water for a power plant. The water is not returned to the river.

The gage is a vertical staff on the middle pier of trail bridge.

At low and medium stages discharge measurements are made by wading near the gage. No equipment has been installed for making measurements at high stages.

This station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of South Fork of Tuolumne River near Groveland, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-ft.*
Sept. 13	J. E. Stewart	0.27	5.1
Dec. 5	H. J. Tompkins	.98	28
1911.			
Aug. 28	H. J. Tompkins	.70	26
1912.			
Apr. 22	H. J. Tompkins	1.60	98

Daily gage height, in feet, of South Fork of Tuolumne River near Groveland, Cal., for 1910–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1						2.20	3.60				1.18	
2												
3				0.80				3.50				
4												
5			0.98				4.85		4.00			
6			.90			3.50						0.80
7												
8					1.75	4.50						
9										1.12		
10									4.00			
11												
12			1.40				3.50					
13			1.25						3.80			.70
14					2.75		3.50					
15						2.30	3.50		3.70			
16					2.50			3.20				
17									3.80			
18										1.88		
19							3.50					
20						3.00						
21											.82	.70
22					2.30	3.20			3.40			
23								3.90	3.40			
24									3.25			
25	0.65			4.00						1.48		
26							3.80					.79
27				2.30								
28											.70	
29								3.20				
30						2.75						
31											.70	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1					0.9				
2				1.0					
3	0.82								
4		0.81						2.1	
5			0.89		.9			2.0	
6				1.05					
7								2.2	
8		.8							
9									
10									
11			.8						
12		.92	.8						
13			.79						
14		1.02			1.1			2.75	
15								2.6	

Daily gage height, in feet, of South Fork of Tuolumme River near Groveland, Cal., for 1910–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
16				1.4			1.6		
17							1.5		
18		0.9							
19			0.8						
20									
21									
22						1.5	1.6		
23	0.8				1.22	1.6		2.3	
24	.8								
25									
26			.75	1.25					
27									
28								2.7	
29	.84								
30				1.24			2.2		1.3
31	.8								

CLAVEY RIVER NEAR TUOLUMNE, CAL.

This station, which is located near the Luke Meadow trail bridge, 11 miles above the junction with Tuolumne River, and about 10 miles southeast of Tuolumne, in the NW. ¼ SW. ¼ sec. 24, T. 1 N., R. 17 E., in the Stanislaus National Forest, was established September 12, 1910.

Reed Creek enters about one-half mile above and Indian Creek 300 feet below the station. Power is developed near the mouth of the river.

The gage is a vertical staff in two sections in the left bank of the river 150 feet below the trail bridge.

At low stages discharge measurements are made by wading. A car and cable for high-stage measurements was installed April 18, 1912, 150 feet below the gage.

Both banks are high and wooded and not subject to overflow. The channel is composed of bowlders and bed rock and is rough. The current is swift at all stages.

This station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of Clavey River near Tuolumne, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-feet.*
Sept. 12	Stewart and Tompkins	0.40	14
Oct. 22	H. J. Tompkins	.78	24
1911.			
Aug. 30	H. J. Tompkins	1.05	31
1912.			
Apr. 20	H. J. Tompkins	2.52	208

Daily gage height, in feet, of Clavey River near Tuolumne, Cal., for 1910–1912.

Day.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.													
1				1.05		7.0				5.8			
2									6.0				
3										5.55			
4						5.0							
5													
6													
7													
8						3.8							
9						3.8			5.8		3.6		
10										6.0			
11											3.45		
12	0.4												
13			1.0										
14												1.4	
15												1.2	
16													
17										5.5			1.0
18						3.0			4.9			1.5	.95
19												1.5	
20	.3	0.9				3.0							
21						2.98				5.1			
22													
23											2.5		
24							5.0						
25													
26							5.2						
27													
28							6.0						
29								5.8			2.0		
30								5.85			2.05	1.05	
31													

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1									4.10
2									
3								3.45	
4	0.95								
5			2.0						
6		0.85							
7		.85							
8									
9									
10									
11									
12									
13									
14									
15	.9	.99					2.60		
16			.94		1.40				
17		1.07			1.41		2.65		
18			.69			1.87	2.72		
19					1.47		2.75		
20		1.35					2.52		2.40
21			.8						
22	1.1	1.0	.96						
23									
24									
25									
26	.85					2.20			
27									
28	.9								1.05
29									
30									
31									

INDIAN CREEK [1] NEAR TUOLUMNE, CAL.

This station, which was located at the Clavey River trail bridge, 300 feet above the mouth of the stream and about 10 miles southeast of Tuolumne, in the Stanislaus National Forest, was established October 22, 1910, and discontinued June 10, 1911.

Indian Creek joins Clavey River about half a mile below the mouth of Reed Creek and 1 mile above the mouth of Quilty Creek.

The gage was a vertical staff fastened to an alder on the right bank, just below the trail crossing.

Discharge measurements were made by wading.

The bed of the stream is rough and there is but one channel at all stages. The current is swift.

This station was maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

The following discharge measurement was made by H. J. Tompkins by wading:

December 6, 1910: Gage height, 1.02 feet; discharge, 1.0 second feet.

Daily gage height, in feet, of Indian Creek near Tuolumne, Cal., for 1910–11.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1910–11.									
1		0.91	1.0		3.0			1.4	
2									
3									
4					2.5				
5									
6									
7									
8					1.0				
9					2.7			1.3	
10									1.0
11									
12									
13		1.0						1.3	
14									
15									
16									
17									
18					1.5				
19		1.0							
20		1.0			1.5				
21					1.5				
22									
23									
24						2.4			
25									
26						2.5			
27		1.0							
28						2.3			
29							1.5		
30							1.45		
31	0.91								

[1] Known also as Bear Creek.

NORTH FORK OF TUOLUMNE RIVER NEAR TUOLUMNE, CAL.

This station, which is located at the Providence mine highway bridge, in the Stanislaus National Forest, about 2 miles southeast of Tuolumne, in the SE. ¼ sec. 9, T. 1 N., R. 16 E., was established September 11, 1910.

Basin Slope Creek enters about 3 miles above and Hunter Creek 2 miles below the station.

The gage is a vertical staff fastened to the left abutment of the bridge. A new low-water gage was installed August 31, 1911, 100 feet downstream from the old gage at a different datum.

Discharge measurements are made by wading whenever possible, as the section at the bridge is rough.

The banks of this stream are high and wooded and not subject to overflow. The bed of the stream is composed of bed rock, small bowlders and sand and is rough. The current is very swift at high stages.

The station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of North Fork of Tuolumne River near Tuolumne, Cal., in 1910–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-feet.*
Sept. 11	Stewart and Tompkins	0.16	6.7
Oct. 23	H. J. Tompkins	.55	13
Dec. 7	do	.60	22
1911.			
June 19	H. J. Tompkins	1.48	115
Aug. 31[a]	do	[b] 1.92	18
1912.			
Apr. 25	H. J. Tompkins	2.79	98

[a] New gage established Aug. 31, 1911, at new location and new datum.
[b] Old gage read 0.50 foot.

Daily gage height, in feet, of North Fork of Tuolumne River near Tuolumne, Cal., for 1910–11.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1			0.49		3.5			2.75	2.0			1.9
2												
3									2.0	1.0		
4					2.5							
5												
6												
7												
8												
9												
10									1.9	.6		

Daily gage height, in feet, of North Fork of Tuolumne River near Tuolumne, Cal., for 1910–11—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
11												1.9
12									1.9			
13							2.75					
14												
15												
16												
17								2.2	1.65			
18								2.75				
19									1.48			
20	0.41											
21												
22												
23						2.8						
24												
25												
26						2.8						
27						3.0						
28												
29												1.95
30							2.7					
31											a1.92	

aNew gage established Aug. 31, 1911, at new location and new datum. Gage height on Dec. 3, 1911, 2.02 feet. No record Jan.–June, 1912.

HUNTER CREEK NEAR TUOLUMNE, CAL.

This station, which is located at the Luke Meadow ford, about 6 miles southeast of Tuolumne, in the NW. ¼ NE. ¼ sec. 19, T. 1 N., R. 17 E., in the Stanislaus National Forest, was established September 11, 1910.

Hunter Creek joins the North Fork of Tuolumne River about 5 miles below the station.

The gage is a vertical staff fastened to an alder on the left bank 50 feet above the ford.

Discharge measurements are made by wading near the ford.

Both banks are high and wooded and not subject to overflow. The bed of the stream is composed of coarse gravel and appears permanent.

This station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of Hunter Creek near Tuolumne, Cal., in 1910–12.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-feet.*
Sept. 11	Stewart and Tompkins	0.20	0.5
Dec. 6	H. J. Tompkins	.40	2.2
1911.			
June 19	H. J. Tompkins	.63	3.4
Aug. 30	.....do	.35	1.0

Daily gage height, in feet, of Hunter Creek near Tuolumne, Cal., for 1910–1912.

Day.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.													
1			0.40	0.42		2.00			0.80	0.70		0.46	0.38
2												.43	.36
3										.70	0.52	.45	.38
4		0.19				1.20						.46	.41
5												.45	.41
6												.45	.41
7												.46	.41
8												.46	.41
9		.18				.91					.50	.45	.41
10											.50	.45	.41
11	0.20												.39
12	.21											.46	.41
13			.46					0.90				.40	.41
14	.27											.42	.38
15										.67		.40	.39
16												.43	.40
17									.70	.65		.44	.38
18						.88			.75			.43	.40
19										.63		.42	.39
20	.45	.31	.45			.90							.38
21						.84						.42	.39
22												.42	.40
23		.32					1.12						.41
24											.50	.40	.40
25							1.10				.50	.37	.41
26							1.10				.50	.38	
27			.46				1.20				.50	.38	
28											.50	.40	.40
29		.33									.47	.40	
30								.83			.49	.38	.42
31		.40										.40	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1									0.48
2									
3							0.53		
4	0.48								
5							.60		
6									.43
7							.54		
8									
9									
10									
11									
12									
13									
14									
15							.76		
16						0.90			
17					0.50	.78	.80		
18									
19					.50				
20									.40
21									
22	.44	0.44	0.54				.65		
23		.54							
24									
25									
26	.47					.63	.64		
27	.49							0.54	
28									.39
29									
30							.82		
31									

STANISLAUS RIVER AT KNIGHTS FERRY, CAL.

This station located in the NE. ¼ sec. 29, T. 1 S., R. 12 E., at Knights Ferry, about 12 miles northeast of Oakdale, was established May 19, 1903.

No important tributaries enter below the station or for many miles above. South Fork joins the main stream about 25 miles above the station.

Numerous ditches divert water from Stanislaus River for mining operations, but most of the water is returned to the river. Some water, however, is diverted from the South Fork and turned into the Tuolumne basin. Water which is not returned to Stanislaus River is also diverted from North Fork for use in the vicinity of Murphy and Angels.

The Stanislaus & San Joaquin Water Co. diverts water about 3 miles above Knights Ferry for power development and also for irrigating land between Knights Ferry and Stockton. The amount used for power is returned to the river through the power house about 1,000 feet above the gaging station. The developed and acquired water rights probably exceed the low-water flow of the stream. Storage for power purposes is developed at Relief reservoir on Middle Fork of Stanislaus River.

The staff gage, the datum of which has not been changed since the station was established, is in several sections on the right bank.

Discharge measurements are made from a cable 25 feet above the gage.

The conditions for obtaining accurate discharge data at this station are not the best, on account of excessive velocities at high stages and changing conditions of control at low and moderate stages. About 800 feet above the station the stream is divided into two channels by an island, and a low dam spans each channel at the head of the island. On the right bank below one of these dams is a power house which operates with water taken from behind the dam, and also from the ditch heading about 3 miles above. The tail water returns to the river above the station and varies with the load at different hours of the day, thus affecting the gage height somewhat at low stages. The channel section at the station is also subject to slight change, and both banks overflow to some extent in high floods.

Records for this station considered fairly good.

Discharge measurements of Stanislaus River at Knights Ferry, Cal., in 1903–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1903.		*Feet.*	*Sec.-feet.*
June 13	S. G. Bennett	10.05	3,704
15	do	9.60	2,854
Sept. 22	do	5.60	32
Nov. 26	do	7.15	648
1904.			
Jan. 20	F. W. Huber	6.60	345
Feb. 14	J. T. Cannon	8.00	1,528
16	do	13.00	14,314
28	do	11.45	8,687
Mar. 1	do	10.00	4,017
15	do	9.50	2,983
21	do	12.00	9,330
27	Bennett and Clapp	10.45	4,327
Apr. 17	J. T. Cannon	10.80	5,091
May 8	do	11.55	7,608
22	do	12.25	8,754
29	do	11.20	6,215
June 19	do	10.00	3,832
29	do	9.00	2,408
July 9	do	8.70	1,832
11	do	8.10	1,291
22	Peterson and Cannon.	7.50	798
Aug. 3	Cannon and McGrath.	6.90	382
24	O. W. Peterson	6.30	84
28	John McGrath	6.45	210
Sept. 11	do	6.00	74
29	do	6.85	330
Oct. 23	do	7.50	744
Nov. 6	do	7.25	445
27	do	6.80	292
1905.			
Mar. 14	F. R. S. Buttemer	9.15	2,523
Apr. 6	O. W. Peterson	9.25	2,687
16	R. S. Hawley	9.30	2,518
May 23	do	10.05	4,062
July 20	do	7.00	425
Sept. 12	Lee and Keeler	6.19	86
22	R. W. Keeler	6.11	77
29	do	6.17	80
Oct. 6	do	6.14	83
13	do	6.19	85
16	Lee and Hawley	6.21	87
Dec. 21	R. W. Keeler	6.41	142
1906.			
Feb. 19	C. H. Lee	9.20	2,740
Mar. 29	R. S. Hawley	10.37	3,920
Apr. 24	do	10.60	4,370
25	Hawley and Ostrom	10.43	4,560
30	G. A. Ostrom	10.00	4,310
May 3	do	11.52	7,090
5	do	12.52	9,690
7	do	13.35	11,800
10	do	13.56	12,900
15	do	12.58	10,100
15	Ostrom and Lee	12.60	10,100
22	G. A. Ostrom	11.72	7,550
26	W. C. Sawyer	12.30	9,650
June 2	G. A. Ostrom	11.23	6,780
5	do	12.84	10,900
11	do	13.95	12,700
12	do	14.55	15,100
13	do	14.71	17,000
15	W. C. Sawyer	12.55	10,200
21	G. A. Ostrom	13.40	12,300
23	W. C. Sawyer	12.08	8,770
29	G. A. Ostrom	10.98	6,640
July 10	W. C. Sawyer	10.78	5,800
14	G. A. Ostrom	11.22	6,890
17	do	10.00	4,760
20	do	9.30	3,360
25	do	9.68	3,750
1906.			
July 28	G. A. Ostrom	8.70	2,500
30	do	8.04	1,690
Aug. 1	do	7.63	1,330
9	do	7.16	1,020
16	do	6.68	634
27	do	6.34	405
Sept. 5	W. F. Martin	6.13	273
9	G. A. Ostrom	6.08	239
18	do	5.86	170
28	do	5.75	115
Oct. 9	do	5.64	71
19	do	5.58	71
Nov. 23	W. F. Martin	5.82	129
1907.			
Jan. 15	T. H. Prowse	7.97	1,710
29	do	10.22	5,080
Feb. 3	do	11.22	7,460
Mar. 11	do	10.72	6,110
Apr. 9	do	11.20	6,590
23	do	11.60	8,080
May 2	W. F. Martin	11.42	7,620
17	T. H. Prowse	12.12	10,200
19	do	12.90	12,500
June 2	do	13.55	12,900
15	do	9.62	4,040
19	do	10.42	5,740
July 10	do	10.24	5,730
15	do	9.75	4,200
Aug. 2	W. A. Lamb	8.50	2,180
14	T. H. Prowse	7.10	921
21	do	6.60	604
Sept. 3	do	6.20	374
23	do	5.70	175
28	W. A. Lamb	5.90	243
Nov. 4	T. H. Prowse	5.85	251
Dec. 12	do	6.24	419
1908.			
Feb. 4	T. H. Prowse	6.65	633
Mar. 5	W. F. Martin	6.78	653
27	T. H. Prowse	7.55	1,210
Apr. 21	do	9.73	3,950
29	W. A. Lamb	9.45	3,640
June 15	W. F. Martin	7.92	1,570
Sept. 8	W. V. Hardy	5.30	70
Oct. 10	do	5.30	77
Nov. 26	T. H. Prowse	5.69	171
1909.			
Feb. 16	W. F. Martin	9.60	3,350
May 18	do	10.46	5,380
July 21	W. V. Hardy	6.85	674
Aug. 19	do	5.80	164
Nov. 6	do	5.61	116
1910.			
Feb. 2	J. E. Stewart	7.72	1,560
Mar. 30	do	9.00	3,040
May 17	do	9.30	3,600
June 27	do	6.62	669
July 16	do	6.00	305
Aug. 27	do	5.54	151
Nov. 1	W. V. Hardy	5.58	131
1911.			
Feb. 16	J. E. Stewart	8.26	2,030
Mar. 10	do	11.70	8,510
May 12	do	11.08	7,270
June 14	W. V. Hardy	12.50	10,600
July 25	J. E. Stewart	7.34	1,630
Sept. 19	do	5.22	163
1912.			
Apr. 11	J. E. Stewart	6.56	855
May 28	do	8.88	3,380
July 11	do	5.83	425

Daily gage height, in feet, of Stanislaus River at Knights Ferry, Cal., for 1903–1912.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.						1903.					
1	.....	11.4	8.4	6.4	5.7	16	.....	9.1	6.9	5.9	5.5
2	.....	11.4	8.3	6.5	5.7	17	.....	9.1	7.0	5.9	5.5
3	.....	10.9	8.1	6.4	5.7	18	.....	8.8	6.9	5.9	5.5
4	.....	10.5	8.1	6.3	5.7	19	9.6	9.3	6.8	5.9	5.5
5	.....	10.4	8.0	6.4	5.6	20	9.6	9.0	6.9	5.9	5.5
6	.....	10.8	7.7	6.4	5.6	21	9.5	9.4	6.7	5.9	5.6
7	.....	10.9	7.7	6.3	5.7	22	9.3	9.1	6.6	5.9	5.6
8	.....	10.6	7.2	6.3	5.6	23	9.1	9.0	6.6	5.8	5.6
9	.....	10.5	7.1	6.2	5.6	24	9.0	8.9	6.6	5.8	5.6
10	.....	10.1	7.1	6.2	5.5	25	8.9	9.1	6.5	5.8	5.6
11	.....	10.1	7.0	6.1	5.5	26	9.1	9.0	6.5	5.8	5.6
12	.....	9.9	6.9	6.1	5.5	27	9.2	8.9	6.5	5.8	5.5
13	.....	9.8	6.9	6.1	5.5	28	9.4	9.0	6.5	5.8	5.5
14	.....	9.8	6.9	6.0	5.5	29	10.2	8.6	6.5	5.8	5.5
15	.....	9.6	6.9	6.0	5.5	30	11.0	8.6	6.5	5.7	5.5
						31	11.7	.....	6.4	5.7	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903–4.												
1	5.5	5.7	6.8	6.4	6.5	9.95	10.6	10.1	10.95	8.9	7.15	6.2
2	5.5	5.7	6.7	6.4	6.45	9.65	10.45	9.85	10.85	8.7	7.05	6.2
3	5.5	5.7	6.6	6.4	6.4	9.8	10.3	9.9	11.75	8.65	7.0	6.15
4	5.5	5.7	6.6	6.4	6.45	9.8	10.3	10.45	11.2	8.65	7.1	6.15
5	5.5	5.7	6.6	6.15	7.0	9.75	10.15	10.9	.....	8.95	7.2	6.1
6	5.6	5.7	6.5	6.4	6.65	9.7	10.15	11.55	11.35	8.5	7.15	6.1
7	5.7	5.7	6.5	6.3	7.2	9.75	10.4	12.1	11.2	8.5	7.15	6.1
8	5.7	5.7	6.5	6.35	7.1	10.3	10.6	11.75	11.05	8.4	7.1	6.15
9	5.7	5.7	6.5	6.3	7.0	10.0	10.95	12.15	10.6	8.35	6.95	6.1
10	5.7	5.7	6.4	6.3	6.85	10.55	11.3	12.5	10.65	8.1	6.85	6.1
11	5.7	5.7	6.4	6.35	6.8	10.4	11.5	12.4	11.15	8.05	6.8	6.05
12	5.7	7.3	6.3	6.4	9.75	10.0	11.75	12.9	11.7	8.05	6.75	6.0
13	5.7	8.2	6.3	6.4	9.0	.....	12.05	12.8	10.5	8.0	6.65	6.0
14	5.7	8.5	6.3	6.4	8.0	9.45	12.3	13.1	10.4	7.85	6.6	6.0
15	5.7	8.7	6.3	6.5	7.7	9.6	11.9	12.8	10.35	7.65	6.6	6.0
16	5.7	7.4	6.3	6.45	12.8	9.45	11.15	12.65	10.3	7.7	7.0	6.0
17	5.6	6.9	6.4	6.4	9.4	9.95	10.75	12.7	10.15	.....	6.85	6.05
18	5.6	6.9	6.6	6.5	8.6	10.85	10.8	12.6	10.0	7.65	6.7	6.1
19	5.6	6.8	6.5	6.55	8.25	11.85	11.6	11.55	10.0	7.7	6.6	6.05
20	5.7	7.3	6.4	6.55	8.0	15.45	10.65	11.45	9.75	7.65	6.6	6.1
21	5.7	9.1	6.4	6.5	8.1	12.9	10.2	12.0	9.85	7.65	6.6	6.05
22	5.7	8.1	6.3	6.4	8.85	11.6	10.2	12.7	9.9	7.65	6.45	6.0
23	5.7	7.7	6.3	6.6	12.2	11.5	10.0	13.2	9.85	7.6	6.4	6.15
24	5.7	7.8	6.3	6.6	15.1	11.75	9.7	13.1	9.6	.....	6.35	6.8
25	5.7	7.4	6.3	6.6	14.25	11.25	9.95	12.95	9.25	.....	6.45	7.25
26	5.7	7.1	6.3	6.55	11.6	10.4	10.35	11.35	.....	.....	6.45	7.35
27	5.7	7.0	6.3	6.5	14.05	10.4	10.05	11.3	8.25	.....	6.5	7.2
28	5.7	7.0	6.3	6.5	11.2	10.45	9.9	11.1	8.5	.....	6.5	6.9
29	5.7	6.9	6.3	6.5	10.35	12.7	9.8	11.4	9.0	.....	6.4	6.85
30	5.7	6.8	6.3	6.5	.....	11.5	10.05	11.25	8.85	.....	6.3	7.05
31	5.7	.....	6.3	6.5	.....	11.15	.....	11.15	.....	7.15	6.35	.....
1904–5.												
1	7.15	7.2	7.0	7.4	7.75	8.25	8.55	9.8	9.45	7.95	6.4	6.15
2	7.3	7.2	7.1	7.3	10.15	8.4	8.7	9.5	9.35	7.8	6.4	6.15
3	7.3	7.15	7.1	7.25	8.4	8.45	8.85	9.35	9.25	7.7	6.4	6.15
4	7.1	7.1	7.05	7.15	8.05	8.55	8.95	9.1	9.0	7.65	6.4	6.15
5	7.05	7.1	6.95	7.1	8.85	8.5	9.1	9.0	8.8	7.6	6.35	5.7
6	7.1	7.05	6.9	7.05	8.45	8.5	9.25	8.85	8.85	7.45	6.3	5.7
7	8.15	7.0	6.9	7.0	8.1	8.5	9.4	9.4	9.2	7.45	6.3	6.2
8	8.8	7.0	6.9	7.0	7.85	8.45	9.4	9.35	9.2	7.45	6.25	6.2
9	8.35	7.0	6.95	7.15	7.8	8.4	9.4	9.1	9.1	7.45	6.25	6.15
10	8.35	6.95	6.9	7.2	7.7	8.4	9.45	8.95	9.15	7.4	6.25	6.1
11	10.35	6.9	6.85	7.1	7.65	8.45	9.15	8.8	9.4	7.3	6.25	6.1
12	9.25	6.9	6.9	7.05	7.6	8.4	8.95	8.75	9.65	7.3	6.25	6.15
13	8.7	6.9	6.9	7.0	7.45	9.1	8.9	8.75	9.65	7.2	6.2	6.15
14	8.4	6.85	6.9	7.0	7.4	9.0	8.95	9.05	9.5	7.1	6.2	6.15
15	8.1	6.8	6.9	7.1	7.4	8.55	9.1	9.5	9.3	7.0	6.25	6.2

Daily gage height, in feet, of Stanislaus River at Knights Ferry, Cal., for 1903–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904–5.												
16	8.0	6.8	6.9	7.4	7.4	9.1	9.25	10.15	9.4	6.9	6.2	6.2
17	7.75	6.85	6.9	7.3	7.7	10.35	9.05	11.2	9.25	6.85	6.2	6.2
18	7.65	6.8	6.85	7.3	7.8	9.6	9.2	10.55	9.2	6.85	6.2	6.2
19	7.55	6.9	6.8	7.25	7.8	11.5	9.25	10.4	9.05	6.75	6.2	6.2
20	7.5	6.9	6.8	7.3	8.6	10.0	8.9	10.25	8.95	6.85	6.25	6.15
21	7.55	6.9	6.8	7.7	8.45	9.35	8.8	10.35	8.95	6.75	6.25	6.15
22	7.5	6.85	6.8	7.5	8.2	9.25	8.75	10.05	8.9	6.7	6.25	6.1
23	7.55	6.8	6.8	7.7	8.1	8.85	8.9	9.9	8.7	6.75	6.25	6.15
24	7.45	6.8	7.0	7.65	8.1	8.8	9.05	9.85	8.45	6.85	6.25	6.15
25	7.4	6.75	7.2	7.55	8.15	8.85	9.45	9.95	8.2	6.75	6.25	6.15
26	7.35	6.7	7.1	7.5	8.3	8.9	9.65	10.0	8.25	6.7	6.25	6.15
27	7.35	6.8	6.9	7.35	8.3	9.2	10.0	9.55	8.1	6.65	6.25	6.15
28	7.35	6.8	6.9	7.3	8.25	8.75	10.1	9.2	8.0	6.55	6.25	6.15
29	7.3	7.15	6.9	7.25	.....	8.95	10.35	9.1	8.0	6.55	6.15	6.15
30	7.3	7.05	6.9	7.05	.....	8.75	10.45	9.3	8.0	6.5	6.25	6.15
31	7.2	.....	8.25	6.75	.....	8.65	.....	9.35	.....	6.45	6.2	6.15
1905–6.												
1	6.1	6.1	6.45	6.4	7.15	8.6	11.5	10.25	10.8	12.0	7.8	6.3
2	6.1	6.1	6.3	6.3	7.2	8.4	10.8	10.8	11.1	12.2	7.75	6.25
3	6.15	6.1	6.25	6.3	7.25	8.45	10.3	11.4	11.4	12.4	7.65	6.25
4	6.15	6.1	6.3	6.3	7.3	9.3	9.95	11.8	12.3	12.3	7.55	6.15
5	6.15	6.1	6.3	6.25	7.25	8.8	9.75	12.35	12.5	12.15	7.45	6.15
6	6.1	6.1	6.3	6.3	7.35	8.65	9.7	12.95	11.4	11.75	7.4	6.1
7	6.1	6.1	6.3	6.3	7.35	8.6	9.7	12.7	11.05	11.6	7.4	6.1
8	6.1	6.1	6.3	6.25	7.3	8.55	9.8	12.85	11.3	11.6	7.35	6.1
9	6.1	6.1	6.3	6.3	7.35	8.65	11.0	12.85	12.05	11.2	7.3	6.1
10	6.1	6.15	6.3	6.3	7.4	8.7	10.4	12.9	12.85	10.6	7.25	6.15
11	6.1	6.2	6.3	6.3	7.5	8.8	10.3	13.35	13.5	10.5	7.2	6.15
12	6.1	6.2	6.3	7.9	7.35	11.1	9.9	12.15	14.1	10.65	7.1	6.1
13	6.1	6.2	6.3	11.35	7.35	10.5	10.0	11.65	13.85	11.1	7.0	6.0
14	6.1	6.2	6.3	10.45	7.5	10.15	10.2	11.8	12.8	10.8	7.0	6.0
15	6.15	6.2	6.3	9.1	8.8	13.2	10.3	12.3	12.8	10.4	6.8	6.0
16	6.2	6.2	6.3	8.8	8.3	10.6	10.6	11.3	13.4	10.0	6.75	6.0
17	6.15	6.2	6.25	9.9	8.0	9.9	10.55	11.2	13.15	9.95	6.7	6.0
18	6.15	6.2	6.25	13.25	7.95	9.35	10.75	11.8	12.4	9.55	6.65	5.95
19	6.15	6.2	6.3	14.1	8.95	9.05	10.8	12.1	13.0	9.3	6.7	5.9
20	6.15	6.2	6.4	9.9	8.7	9.0	11.15	12.1	12.9	9.3	6.8	5.85
21	6.15	6.25	6.4	8.9	9.9	9.2	11.4	11.9	12.9	9.25	6.7	5.8
22	6.15	6.3	6.3	8.4	9.85	9.75	11.6	11.5	12.8	9.3	6.6	5.8
23	6.15	6.3	6.25	8.05	9.3	10.2	11.85	11.0	12.45	9.5	6.55	5.8
24	6.15	6.25	6.2	7.9	9.25	14.1	10.9	10.9	12.15	9.45	6.45	5.8
25	6.1	6.2	6.2	7.75	9.4	14.3	10.4	10.8	12.55	9.4	6.35	5.85
26	6.1	6.2	6.25	7.65	8.95	13.0	10.2	11.9	12.1	9.2	6.3	5.9
27	6.1	6.3	6.3	7.55	8.8	11.5	10.3	11.7	11.1	9.0	6.25	5.9
28	6.1	6.3	6.3	7.5	9.0	10.75	10.5	12.05	10.7	8.7	6.25	5.8
29	6.1	6.4	6.4	7.5	.....	10.4	10.1	11.1	10.8	8.4	6.2	5.8
30	6.1	6.5	6.45	7.45	.....	11.1	10.0	10.75	11.2	8.15	6.2	5.75
31	6.1	.....	6.4	7.3	.....	13.55	.....	10.6	.....	7.95	6.3	.....
1906–7.												
1	5.8	5.7	5.8	7.4	8.6	8.2	11.15	11.3	12.8	11.2	8.4	6.2
2	5.8	5.7	5.8	7.05	12.55	8.55	11.35	11.45	13.15	10.95	8.35	6.2
3	5.8	5.7	5.7	6.9	11.05	8.3	11.05	11.35	12.9	10.9	8.2	6.2
4	5.8	5.85	5.8	6.95	11.35	8.65	10.9	11.1	12.95	11.0	8.0	6.2
5	5.8	6.45	5.8	7.65	10.8	9.4	10.85	10.7	12.7	11.3	7.9	6.45
6	5.8	6.15	5.8	7.2	9.95	9.2	10.65	10.6	12.25	10.7	7.9	6.4
7	5.85	5.9	5.8	7.2	9.55	8.9	10.6	10.65	11.8	10.55	7.9	6.35
8	5.75	5.9	6.2	8.4	9.25	8.65	10.7	10.6	10.9	10.55	7.8	6.2
9	5.75	5.85	5.9	8.3	9.1	8.75	11.15	11.05	10.9	10.55	7.6	6.1
10	5.75	5.85	6.05	7.9	8.9	14.0	11.4	11.6	11.25	10.3	7.5	6.1
11	5.8	5.85	13.1	7.4	8.8	10.8	11.5	11.8	11.75	10.2	7.15	6.1
12	5.75	5.85	9.95	7.2	8.7	10.1	11.9	11.15	11.9	10.2	7.2	6.1
13	5.75	5.9	7.65	7.3	8.6	9.45	12.25	10.6	10.6	10.15	7.15	6.1
14	5.75	5.7	6.85	8.15	8.55	9.1	12.75	10.5	10.05	9.9	7.15	6.1
15	5.75	5.6	6.55	8.0	8.5	8.85	12.25	11.0	9.8	9.65	7.15	6.05
16	5.9	5.6	6.55	7.4	8.5	8.85	11.7	11.9	9.7	9.4	7.2	6.05
17	5.7	5.6	6.3	7.8	8.75	14.5	11.7	11.85	9.6	9.35	7.15	5.95
18	5.7	5.7	6.2	7.6	8.55	17.35	11.85	12.35	9.85	9.2	7.1	5.9
19	5.7	5.65	6.2	7.25	8.3	25.30	12.15	12.6	10.4	9.4	7.05	5.9
20	5.7	5.6	6.15	7.1	8.25	19.1	12.15	11.75	11.0	9.4	6.85	5.85

Daily gage height, in feet, of Stanislaus River at Knights Ferry, Cal., for 1903–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.												
21	5.7	5.7	6.1	7.1	8.35	15.6	11.8	11.6	11.3	9.2	6.6	5.8
22	5.75	5.7	6.1	7.1	10.85	14.55	11.85	11.6	11.45	8.9	6.6	5.8
23	5.7	5.7	6.25	7.0	9.5	14.15	12.0	10.75	11.0	8.85	6.6	5.8
24	5.75	5.75	6.35	7.3	8.85	13.8	12.1	10.75	10.45	8.5	6.55	5.75
25	5.75	5.8	7.65	7.5	8.9	14.2	11.85	11.4	10.5	9.1	6.5	5.7
26	5.75	5.8	9.3	7.35	8.8	12.75	11.9	11.5	10.9	9.0	6.45	5.7
27	5.75	5.8	9.35	7.4	8.55	11.8	11.9	11.7	11.2	8.9	6.45	5.75
28	5.7	5.8	8.45	10.95	8.35	11.4	11.9	11.85	11.6	8.9	6.4	5.75
29	5.7	5.8	7.75	10.1	.....	11.1	11.85	12.1	11.9	8.8	6.3	5.7
30	5.7	5.8	7.45	8.95	.....	11.0	11.4	12.3	11.85	8.65	6.3	5.7
31	5.7	.....	8.3	8.4	.....	11.0	.....	12.7	.....	8.5	6.2	.....
1907–8.												
1	5.7	5.9	5.6	6.6	6.2	7.25	7.1	9.25	7.9	6.7	6.0	5.3
2	5.7	5 85	5.6	6.4	6.2	7.3	7.0	9.45	7.9	6.65	5.9	5.3
3	5.7	5.85	5.6	6.3	6.35	7.3	7.0	8.95	7.8	6.75	6.0	5.3
4	5.7	5.85	5.6	6.4	6.4	7.0	7.3	8.5	7.5	6.7	5.9	5.3
5	5.7	5.85	5.6	6.2	6.45	6.9	7.7	8.35	7.5	6.75	5.8	5.3
6	5.7	5.85	5.6	6.15	6.3	6.95	7.7	8.55	7.6	6.65	5.8	5.3
7	5.7	5.85	6.1	6.1	6.3	6.7	7.85	8.9	7.7	6.6	5.8	5.3
8	5.65	5.75	6.5	6.1	6.3	6.6	7.55	8.65	8.05	6.55	5.85	5.3
9	5.65	5.75	6.1	6.1	7.5	6.7	7.6	8.2	8.0	6.4	5.7	5.3
10	5.65	5.75	6.0	6.2	7.0	6.85	8.05	7.95	8.2	6.4	5.6	5.35
11	5.65	5.75	6.6	6.1	6.65	6.85	8.7	7.9	7.95	6.45	5.6	5.3
12	5.65	5.75	6.3	6.0	6.45	7.0	9.1	8.15	8.1	6.4	5.6	5.3
13	5.65	5.75	6.1	6.0	6.4	7.1	9.2	8.05	8.1	6.4	5.6	5.3
14	5.65	5.7	6.05	7.6	6.4	7.3	9.5	8.0	8.1	6.35	5.6	5.3
15	5.65	5.65	6.05	6.8	6.3	7.5	9.1	7.95	8.0	6.3	5.45	5.3
16	5.65	5.65	6.0	6.45	6.2	7.7	8.8	7.85	7.8	6.2	5.5	5.3
17	5.65	5.65	6.0	6.4	6.2	7.8	8.45	7.85	7.6	6.15	5.45	5.3
18	5.7	5.65	5.9	6.3	6.2	7.9	8.8	7.75	7.5	5.9	5.5	5.3
19	5.7	5.7	5.9	6.3	6.2	7.8	9.3	8.2	7.35	5.9	5.5	5.3
20	5.7	5.7	5.9	6.25	6.2	7.9	9.55	8.2	7.4	5.9	5.4	5.3
21	5.7	5.65	5.9	6.3	6.15	7.95	9.5	7.95	7.1	5.95	5.45	5.3
22	5.8	5.65	5.9	6.45	6.15	7.85	9.1	8.0	7.0	5.95	5.45	5.3
23	5.8	5.65	5.85	6.7	6.2	7.7	8.65	8.35	7.15	5.95	5.4	5.3
24	5.8	5.65	5.8	6.7	6.1	7.9	8.2	8.4	7.1	5.9	5.3	5.3
25	5.85	5.6	5.8	7.4	6.15	8.1	8.3	8.8	7.0	5.9	5.3	5.3
26	5.95	5.65	5.8	6.6	6.2	7.9	8.35	8.85	7.0	5.9	5.25	5.35
27	6.05	6.65	6.75	6.5	6.45	7.55	8.85	8.6	7.0	5.9	5.25	5.55
28	6.0	5.65	6.95	6.4	6.7	7.35	9.3	8.5	6.9	5.9	5.3	5.3
29	6.0	5.65	6.55	6.4	7.5	7.25	9.4	8.65	6.7	5.9	5.3	5.3
30	6.0	5.6	6.35	6.3	.....	7.25	9.35	8.7	6.7	5.95	5.25	5.3
31	5.9	.....	7.0	6.25	.....	7.3	.....	8.3	.....	6.2	5.3	.....
1908–9.												
1	5.3	5.4	5.4	5.5	8.7	8.5	8.5	11.3	11.8	9.15	6.65	5.65
2	5.3	5.4	5.4	5.6	8.5	8.5	8.85	11.55	12.3	9.4	6.45	5.6
3	5.3	5.35	5.4	5.5	10.3	8.9	9.15	11.65	12.15	9.2	6.4	5.6
4	5.3	5.3	5.5	5.8	9.3	10.0	9.6	11.8	12.3	9.05	6.4	5.55
5	5.3	5.3	5.9	6.0	9.45	9.6	9.2	11.85	12.3	8.5	6.3	5.5
6	5.3	5.35	5.95	7.25	9.05	9.65	9.0	11.75	11.55	8.35	6.3	5.5
7	5.3	5.3	5.7	7.55	10.65	9.55	8.95	11.9	11.0	7.8	6.25	5.6
8	5.3	5.3	5.7	7.95	10.15	9.2	9.1	11.75	10.75	7.65	6.2	5.5
9	5.3	5.35	5.65	7.6	9.4	9.0	9.5	11.45	10.45	7.85	7.0	5.55
10	5.3	5.35	5.65	7.55	9.0	8.9	9.7	11.4	10.3	7.7	6.75	5.5
11	5.3	5.35	5.6	6.95	10.45	8.75	9.5	10.55	10.5	7.8	6.35	5.55
12	5.3	5.35	5.55	6.6	12.9	8.6	9.5	10.4	10.7	7.8	6.15	5.55
13	5.3	5.35	5.55	11.9	11.6	8.55	10.0	10.15	10.5	8.3	6.15	5.5
14	5.3	5.35	5.6	15.5	10.45	8.55	10.4	10.15	10.3	7.6	6.0	5.6
15	5.3	5.4	5.6	15.3	9.8	8.6	10.8	10.55	10.5	7.6	5.8	5.6
16	5.6	5.4	5.5	13.2	9.6	8.8	11.1	10.5	10.2	7.55	5.8	5.5
17	6.1	5.35	5.5	11.7	9.9	8.8	11.35	10.4	9.95	7.5	5.85	5.55
18	5.7	5.35	5.4	10.65	9.8	8.7	11.4	10.6	9.7	7.35	5.75	5.5
19	5.6	5.35	5.45	10.2	9.6	8.8	11.35	10.4	9.5	7.2	5.7	5.5
20	5.45	5.35	5.45	10.35	9.3	8.75	10.65	10.95	9.1	6.9	5.75	5.5
21	5.4	5.35	5.5	20.1	9.9	8.75	10.4	11.15	9.35	6.7	5.8	5.5
22	5.5	5.4	5.5	13.2	9.3	8.65	10.05	10.5	9.9	6.9	5.8	5.5
23	5.4	5.4	5.5	11.1	9.1	8.6	10.15	10.0	10.3	7.0	5.75	5.45
24	5.4	5.85	5.55	10.3	8.95	8.45	10.35	9.5	10.35	7.0	5.75	5.5
25	5.35	5.8	5.4	10.25	8.85	8.4	10.5	9.75	10.15	6.65	5.7	5.45

Daily gage height, in feet, of Stanislaus River at Knights Ferry, Cal., for 1903–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908–9.												
26	5.3	5.7	5.5	10.45	8.7	8.3	10.85	10.55	9.85	6.5	5.75	5.25
27	5.4	5.6	5.5	10.3	8.6	8.25	10.8	10.6	9.9	6.5	5.75	5.25
28	5.35	5.5	5.5	9.6	8.5	8.2	11.0	10.8	9.65	6.7	5.85	5.25
29	5.4	5.4	5.45	9.2	.....	8.7	10.9	9.9	9.8	6.6	5.75	5.25
30	5.4	5.4	5.45	9.05	.....	8.55	11.0	9.85	9.75	6.3	5.75	5.5
31	5.4	.....	5.5	8.95	.....	8.45	.....	11.15	.....	6.5	5.7	.....
1909–10.												
1	5.5	5.7	8.2	10.9	8.05	8.4	9.2	9.45	9.5	6.55	5.8	5.4
2	5.5	5.7	12.05	9.5	7.9	8.45	9.35	9.2	9.35	6.6	5.9	5.4
3	5.6	5.7	9.35	8.8	7.7	8.7	9.3	9.15	8.9	6.45	5.9	5.4
4	5.6	5.65	8.5	8.45	7.65	8.85	9.35	9.05	8.7	6.45	5.8	5.4
5	5.65	5.6	8.6	8.15	7.6	8.8	9.6	8.75	8.15	6.4	5.9	5.6
6	5.6	5.6	8.1	8.1	7.55	8.85	9.5	8.7	8.05	6.35	5.5	5.4
7	5.55	5.7	8.1	8.5	7.7	8.8	9.6	8.55	7.85	6.3	5.45	5.4
8	5.55	5.85	8.15	7.85	7.65	8.85	10.0	9.8	7.75	6.1	5.5	5.4
9	5.6	5.8	12.4	7.85	7.7	9.05	10.3	10.2	7.8	6.1	5.5	5.4
10	5.5	6.2	9.4	7.85	7.8	9.1	10.2	10.3	7.8	6.1	5.4	5.4
11	5.5	6.0	8.7	7.7	7.55	9.15	10.3	10.1	7.85	6.2	5.45	5.4
12	5.5	6.0	8.3	7.6	7.5	9.3	9.7	9.6	7.9	6.35	5.6	5.4
13	5.5	6.0	8.2	7.55	7.6	9.3	9.65	9.7	7.8	6.25	5.8	5.5
14	5.5	6.1	8.05	7.9	7.7	9.35	10.05	9.6	7.65	6.05	5.7	5.4
15	5.55	6.05	8.0	8.1	7.7	9.15	10.05	9.75	7.4	6.05	5.6	5.4
16	5.45	6.0	7.8	9.05	7.7	8.8	10.3	9.55	7.15	6.1	5.5	5.45
17	5.45	6.0	7.75	8.45	7.7	8.8	10.75	9.2	7.2	6.0	5.55	6.1
18	5.6	5.85	7.6	7.95	7.55	9.4	10.85	9.05	7.1	6.05	.....	6.05
19	5.55	5.95	7.6	7.8	7.7	11.05	10.95	9.1	7.0	6.1	.....	5.85
20	5.65	6.05	7.6	7.7	7.85	11.6	11.1	9.05	7.3	6.35	.....	5.65
21	5.8	11.2	7.5	7.6	7.7	11.0	10.65	9.0	7.2	6.3	5.45	5.65
22	5.5	9.1	7.4	7.7	7.6	10.4	10.5	9.1	6.95	6.1	5.45	5.6
23	5.5	8.8	7.35	8.05	7.85	10.95	10.7	9.5	6.85	6.0	5.4	5.5
24	5.55	7.95	7.1	9.25	7.7	9.95	10.8	9.6	6.8	6.0	5.4	5.5
25	5.65	9.25	7.0	8.95	7.8	9.55	10.8	9.6	6.75	5.9	5.4	5.5
26	5.6	8.64	7.1	8.5	7.8	9.3	10.8	9.2	6.6	5.7	5.45	5.5
27	5.6	7.9	7.05	8.35	7.85	9.1	11.0	9.1	6.7	5.8	5.4	5.5
28	5.6	7.4	6.95	8.2	7.95	9.1	11.45	9.5	6.8	5.8	5.4	5.5
29	5.55	7.45	6.9	8.15	.....	8.95	10.5	9.55	6.7	5.8	5.4	5.65
30	5.7	7.4	6.9	8.05	.....	8.9	9.9	9.4	6.6	5.8	5.45	5.5
31	5.7	.....	10.75	8.0	.....	9.0	.....	9.4	.....	5.6	5.4	.....
1910–11.												
1	5.45	5.7	5.7	5.85	13.25	8.40	11.10	10.39	10.35	9.42	.....	5.54
2	5.45	5.7	5.7	5.75	11.25	8.42	11.18	10.26	10.90	9.42	.....	5.40
3	5.5	5.7	5.7	5.70	10.32	9.18	11.39	10.24	11.40	9.58	6.45	5.62
4	5.5	5.65	5.95	5.78	10.20	10.92	10.71	11.02	11.82	9.70	6.28	5.60
5	5.5	5.7	6.35	5.80	9.72	10.80	11.25	11.68	12.05	9.58	6.30	5.58
6	5.5	5.55	6.1	5.76	9.38	10.84	11.95	10.60	12.15	9.68	6.14	5.45
7	5.5	5.55	6.0	5.90	9.05	14.02	11.00	10.28	11.95	9.58	6.00	5.38
8	5.5	6.0	6.0	5.66	8.76	13.65	10.62	10.18	11.78	9.36	6.02	5.40
9	5.45	5.9	6.35	5.84	8.62	12.08	11.15	10.45	11.68	9.05	6.02	5.32
10	5.5	5.6	6.15	6.95	8.48	11.52	10.75	10.32	11.95	8.94	6.09	5.33
11	5.5	5.6	6.6	6.55	8.82	10.52	10.22	10.55	11.35	9.04	5.92	5.34
12	5.7	5.75	6.9	7.61	8.40	9.90	9.92	10.92	12.75	9.20	5.96	5.31
13	5.9	5.7	6.5	10.33	9.42	9.65	9.62	10.68	12.55	8.95	5.90	5.30
14	5.85	5.75	6.3	8.70	9.20	9.40	9.42	10.58	12.30	9.00	5.80	5.16
15	5.8	5.75	6.2	8.46	8.98	9.22	9.30	10.10	12.22	8.65	5.85	5.30
16	5.8	5.75	6.15	7.18	8.34	9.15	9.32	9.79	12.35	8.88	5.82	5.30
17	5.7	5.8	6.0	6.72	8.08	9.12	9.49	9.66	12.30	8.62	5.85	5.20
18	5.7	5.7	5.95	6.65	8.05	9.15	9.80	9.42	12.24	8.75	.....	5.28
19	5.7	5.65	5.85	6.78	8.00	9.25	10.16	10.15	12.15	8.52	5.55	5.21
20	5.65	5.6	5.8	9.48	7.94	9.34	10.11	10.52	12.05	8.25	5.62	5.34
21	5.7	5.7	5.85	9.23	7.88	9.38	10.12	11.05	11.75	7.95	5.54	5.28
22	5.7	5.65	5.8	7.85	7.75	9.45	10.40	11.60	11.22	7.68	5.44	5.30
23	5.7	5.65	5.8	7.34	7.72	9.52	10.76	12.18	10.82	7.15	5.56	5.30
24	5.6	5.8	5.8	11.33	7.72	9.60	11.08	12.20	10.02	7.25	5.51	5.26
25	5.6	5.75	5.75	11.48	7.55	9.65	11.42	11.25	9.70	7.40	5.46	5.28
26	5.65	5.8	5.7	9.42	7.55	9.75	11.52	10.69	9.80	7.15	5.44	5.30
27	5.65	5.9	5.8	8.65	7.60	9.78	11.05	10.72	10.38	7.15	5.56	5.39
28	5.6	5.8	5.75	8.15	7.52	9.98	10.35	10.95	10.58	7.00	5.45	5.30
29	5.65	5.7	5.7	10.57	.....	10.12	9.95	11.05	10.08	.....	5.44	5.29
30	5.5	5.7	5.7	19.83	.....	10.38	10.00	10.95	9.80	.....	5.40	5.37
31	5.5	.....	5.8	[a]20.14	.....	10.68	.....	10.38	.....	.....	5.40	.....

[a] Crest height 26 feet at 4 a. m.

Daily gage height, in feet, of Stanislaus River at Knights Ferry, Cal., for 1903–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911–12.												
1	5.45	5.45	5.62	5.63	5.52	5.27	5.84	7.3	9.8	.....	.....	.....
2	5.40	5.38	5.50	5.62	5.50	5.24	5.89	7.2	10.2	.....	.....	.....
3	5.45	5.35	5.56	5.60	5.48	5.26	6.15	7.2	10.3	.....	.....	.....
4	5.35	5.45	5.56	5.60	5.50	5.32	6.25	7.1	10.4	.....	.....	.....
5	5.42	5.40	5.50	5.50	5.48	5.49	6.3	7.3	10.2	.....	.....	.....
6	5.36	5.28	5.68	5.52	5.47	5.78	6.1	7.4	10.1	.....	.....	.....
7	5.45	5.35	5.40	5.48	5.38	6.3	6.3	7.4	9.8	.....	.....	.....
8	5.30	5.32	5.50	5.48	5.39	6.2	6.75	8.0	9.4	.....	.....	.....
9	5.28	5.36	5.46	5.52	5.40	5.99	6.75	7.8	8.7	.....	.....	.....
10	5.30	5.55	5.44	5.62	5.39	5.95	7.0	8.3	8.3	.....	.....	.....
11	5.31	5.72	5.52	5.60	5.40	5.89	6.8	8.8	8.3	.....	.....	.....
12	5.34	5.65	5.38	5.56	5.48	6.15	6.55	9.2	8.4	.....	.....	.....
13	5.28	5.70	5.48	5.55	5.40	6.7	6.3	9.4	8.3	.....	.....	.....
14	5.30	5.63	5.48	5.60	5.37	6.15	6.4	9.3	8.2	.....	.....	.....
15	5.34	5.62	5.45	5.61	5.38	5.92	6.15	9.7	7.9	.....	.....	.....
16	5.31	5.65	5.45	5.54	5.38	6.6	6.15	10.0	7.7	.....	.....	.....
17	5.26	5.65	5.58	5.49	5.44	6.05	6.2	9.9	7.6	.....	.....	.....
18	5.35	5.70	5.51	5.52	5.40	5.92	6.4	9.9	7.6	.....	.....	.....
19	5.38	5.70	5.51	5.51	5.38	5.85	6.3	10.0	7.6	.....	.....	.....
20	5.30	5.68	5.51	5.52	5.38	5.75	6.2	9.4	7.6	.....	.....	.....
21	5.30	5.60	5.42	5.42	5.55	5.90	6.05	8.6	7.4	.....	.....	.....
22	5.34	5.62	5.44	5.40	5.42	5.80	5.96	8.1	7.0	.....	.....	.....
23	5.30	5.62	5.45	5.40	5.49	5.80	6.05	7.7	6.75	.....	.....	.....
24	5.34	5.68	5.38	5.36	5.34	5.77	6.05	7.9	6.55	.....	.....	.....
25	5.24	5.70	5.38	5.35	5.37	5.78	6.25	8.0	6.5	.....	.....	.....
26	5.29	5.65	5.26	5.55	5.41	5.89	6.4	9.1	6.25	.....	.....	.....
27	5.29	5.65	5.42	6.4	5.31	5.82	6.55	8.7	6.2	.....	.....	.....
28	5.32	5.62	5.56	5.96	5.32	5.87	6.4	8.7	6.2	.....	.....	.....
29	5.34	5.55	5.81	5.75	5.28	5.88	7.0	9.8	6.15	.....	.....	.....
30	5.35	5.69	5.58	5.62	.....	5.90	7.4	10.3	6.25	.....	.....	.....
31	5.29	.....	5.61	5.60	.....	5.85	.....	9.6	.....	.....	.....	.....

NOTE.—Gage heights Jan. 12–16, 19–25, 29–31, Mar. 3–10, 1911, determined by means of a graph.

Rating tables for Stanislaus River at Knights Ferry, Cal.

May 19 to Dec. 31, 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
5.50	25	6.50	300	8.00	1,310	10.00	3,750
5.60	35	6.60	340	8.20	1,500	10.20	4,110
5.70	50	6.70	390	8.40	1,700	10.40	4,510
5.80	75	6.80	440	8.60	1,910	10.60	4,930
5.90	100	6.90	495	8.80	2,140	10.80	5,400
6.00	125	7.00	550	9.00	2,400	11.00	5,920
6.10	155	7.20	670	9.20	2,660	11.20	6,500
6.20	185	7.40	810	9.40	2,920	11.40	7,130
6.30	220	7.60	960	9.60	3,180	11.60	7,380
6.40	260	7.80	1,130	9.80	3,460		

Jan. 1, 1904, to Dec. 31, 1905.

6.00	60	7.30	630	8.60	1,840	10.80	5,230
6.10	70	7.40	710	8.70	1,960	11.00	5,730
6.20	80	7.50	800	8.80	2,080	11.20	6,330
6.30	95	7.60	890	8.90	2,200	11.40	6,990
6.40	125	7.70	980	9.00	2,320	11.60	7,700
6.50	160	7.80	1,070	9.20	2,560	11.80	8,500
6.60	200	7.90	1,160	9.40	2,800	12.00	9,300
6.70	245	8.00	1,250	9.60	3,100	13.00	14,400
6.80	295	8.10	1,340	9.80	3,400	14.00	20,400
6.90	350	8.20	1,440	10.00	3,700	15.00	26,900
7.00	410	8.30	1,540	10.20	4,040	15.50	30,400
7.10	480	8.40	1,640	10.40	4,400		
7.20	550	8.50	1,740	10.60	4,800		

Rating tables for Stanislaus River at Knights Ferry, Cal.—Continued.

Jan. 1 to Dec. 31, 1906.[a]

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
5.60	65	7.00	870	8.40	2,190	10.60	5,400
5.70	95	7.10	950	8.50	2,310	10.80	5,760
5.80	130	7.20	1,030	8.60	2,430	11.00	6,140
5.90	170	7.30	1,110	8.70	2,550	11.20	6,540
6.00	220	7.40	1,190	8.80	2,670	11.40	6,970
6.10	270	7.50	1,270	8.90	2,800	11.60	7,410
6.20	320	7.60	1,360	9.00	2,930	11.80	7,880
6.30	380	7.70	1,450	9.20	3,200	12.00	8,390
6.40	440	7.80	1,540	9.40	3,480	13.00	11,110
6.50	500	7.90	1,640	9.60	3,760	14.00	14,020
6.60	570	8.00	1,740	9.80	4,060	15.00	17,180
6.70	640	8.10	1,850	10.00	4,380		
6.80	710	8.20	1,960	10.20	4,710		
6.90	790	8.30	2,070	10.40	5,050		

Jan. 1 to July 31, 1907.[b]

9.00	2,930	10.00	4,580	12.00	9,000	18.00	28,400
9.10	3,070	10.20	4,950	12.20	9,510	19.00	32,300
9.20	3,220	10.40	5,330	12.40	10,030	20.00	36,200
9.30	3,370	10.60	5,730	12.60	10,570	21.00	40,100
9.40	3,530	10.80	6,150	12.80	11,120	22.00	44,000
9.50	3,700	11.00	6,590	13.00	11,690	23.00	48,000
9.60	3,870	11.20	7,050	14.00	14,600	24.00	52,000
9.70	4,040	11.40	7,520	15.00	17,800	25.00	56,000
9.80	4,220	11.60	8,000	16.00	21,200	26.00	60,000
9.90	4,400	11.80	8,500	17.00	24,700		

Aug. 1, 1907, to Dec. 31, 1908.[c]

5.20	50	6.30	415	7.40	1,110	8.50	2,230
5.30	70	6.40	470	7.50	1,190	8.60	2,350
5.40	95	6.50	525	7.60	1,280	8.70	2,480
5.50	120	6.60	580	7.70	1,370	8.80	2,610
5.60	145	6.70	640	7.80	1,470	8.90	2,740
5.70	175	6.80	700	7.90	1,570	9.00	2,880
5.80	205	6.90	760	8.00	1,670	9.20	3,160
5.90	240	7.00	820	8.10	1,780	9.40	3,460
6.00	280	7.10	890	8.20	1,890	9.60	3,760
6.10	320	7.20	960	8.30	2,000		
6.20	365	7.30	1,030	8.40	2,110		

[a] This table is based on 40 discharge measurements made during 1906 and is well defined.

[b] This table is not applicable for obstructed channel. It is based on discharge measurements made during 1906 and 1907 and is fairly well defined between gage heights 7 feet and 13.5 feet. Above gage height 22 feet the rating curve is a tangent, the difference being 400 per tenth. Below 9 feet it is the same as the 1906 table.

[c] This table is not applicable for periods of obstructed channel. It is based on 17 discharge measurements made during 1907 and 1908 and is well defined. Above 9.5 feet it is the same as the 1906 table.

Daily discharge, in second-feet, of Stanislaus River at Knights Ferry, Cal., for 1909–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	120	2,530	2,280	2,280	7,020	8,230	3,130	540	128
2	145	2,280	2,280	2,720	7,610	9,550	3,490	430	115
3	120	4,970	2,790	3,130	7,860	9,140	3,200	405	115
4	205	3,340	4,440	3,790	8,230	9,550	2,990	405	102
5	280	3,560	3,790	3,200	8,360	9,550	2,280	360	90
6	995	2,990	3,870	2,920	8,100	7,610	2,100	360	90
7	1,240	5,640	3,720	2,860	8,490	6,360	1,490	338	115
8	1,620	4,700	3,200	3,060	8,100	5,840	1,340	315	90
9	1,280	3,490	2,920	3,640	7,370	5,260	1,540	780	102
10	1,240	2,920	2,790	3,950	7,250	4,970	1,390	602	90

Daily discharge, in second-feet, of Stanislaus River at Knights Ferry, Cal., for 1909–1912— Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
11	790	5,260	2,600	3,640	5,440	5,350	1,490	382	102
12	580	11,300	2,400	3,640	5,160	5,740	1,490	295	102
13	8,620	7,730	2,340	4,440	4,700	5,350	2,040	295	90
14	19,500	5,260	2,340	5,160	4,700	4,970	1,290	235	115
15	18,800	4,110	2,400	5,940	5,440	5,350	1,290	170	115
16	12,200	3,790	2,660	6,580	5,350	4,790	1,240	170	90
17	7,980	4,270	2,660	7,140	5,160	4,360	1,200	185	102
18	5,640	4,110	2,530	7,250	5,540	3,950	1,060	155	90
19	4,790	3,790	2,660	7,140	5,160	3,640	940	140	90
20	5,060	3,340	2,600	5,640	6,260	3,060	705	155	90
21	36,600	4,270	2,600	5,160	6,690	3,420	570	170	90
22	12,200	3,340	2,460	4,520	5,350	4,270	705	170	90
23	6,580	3,060	2,400	4,700	4,440	4,970	780	155	80
24	4,970	2,860	2,220	5,060	3,640	5,060	780	155	90
25	4,880	2,720	2,160	5,350	4,030	4,700	540	140	80
26	5,260	2,530	2,040	6,040	5,440	4,190	455	155	42
27	4,970	2,400	1,980	5,940	5,540	4,270	455	155	42
28	3,790	2,280	1,920	6,360	5,940	3,870	570	185	42
29	3,200	.....	2,530	6,150	4,270	4,110	510	155	42
30	2,990	.....	2,340	6,360	4,190	4,030	360	155	90
31	2,860	.....	2,220	.....	6,690	.....	455	140	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
1	90	140	1,920	6,370	1,910	2,340	3,400	3,760	3,840	598	219	105
2	90	140	8,880	3,840	1,740	2,400	3,620	3,400	3,620	631	258	105
3	115	140	3,420	2,860	1,530	2,730	3,540	3,330	2,990	536	258	105
4	115	128	2,280	2,400	1,480	2,920	3,620	3,190	2,730	536	219	105
5	128	115	2,400	2,030	1,430	2,860	3,990	2,800	2,030	506	258	156
6	115	115	1,810	1,970	1,380	2,920	3,840	2,730	1,910	478	129	105
7	102	140	1,810	1,910	1,530	2,860	3,990	2,540	1,680	451	117	105
8	102	185	1,860	1,680	1,480	2,920	4,640	4,310	1,580	349	129	105
9	115	170	9,830	1,680	1,530	3,190	5,170	4,990	1,630	349	129	105
10	90	315	3,490	1,680	1,630	3,260	4,990	5,170	1,630	349	105	105
11	90	235	2,530	1,530	1,380	3,330	5,170	4,810	1,680	399	117	105
12	90	235	2,040	1,430	1,530	3,540	4,150	3,990	1,740	478	156	105
13	90	235	1,920	1,380	1,430	3,540	4,070	4,150	1,630	425	219	129
14	90	275	1,760	1,740	1,530	3,620	4,720	3,990	1,480	325	185	105
15	102	255	1,700	1,970	1,530	3,330	4,720	4,230	1,250	325	156	105
16	80	235	1,490	3,190	1,530	2,860	5,170	3,920	1,040	349	129	117
17	80	235	1,440	2,400	1,530	2,860	6,060	3,400	1,080	301	142	349
18	115	185	1,290	1,800	1,380	3,690	6,260	3,190	1,000	325	142	325
19	102	218	1,290	1,630	1,530	6,700	6,480	3,260	920	349	142	238
20	128	255	1,290	1,530	1,680	8,000	6,810	3,190	1,160	478	129	170
21	170	6,800	1,200	1,430	1,530	6,590	5,850	3,120	1,080	451	117	170
22	90	3,060	1,110	1,530	1,430	5,360	5,550	3,260	882	349	117	156
23	90	2,660	1,060	1,910	1,680	6,480	5,950	3,840	808	301	105	129
24	102	1,640	860	3,470	1,530	4,560	6,160	3,990	771	301	105	129
25	128	3,270	780	3,060	1,630	3,920	6,160	3,990	736	258	105	129
26	115	2,450	860	2,470	1,630	3,540	6,160	3,400	631	185	117	129
27	115	1,590	820	2,280	1,680	3,260	6,590	3,260	700	219	105	129
28	115	1,110	742	2,090	1,800	3,260	7,630	3,840	771	219	105	129
29	102	1,160	705	2,030	.....	3,060	5,550	3,920	700	219	105	170
30	140	1,110	705	1,910	.....	2,990	4,470	3,690	631	219	117	129
31	140	.....	5,840	1,850	.....	3,120	.....	3,690	.....	156	105	.....
1910–11.												
1	117	185	185	202	12,300	2,190	7,300	5,860	5,790	4,260	982	293
2	117	185	185	170	6,980	2,210	7,480	5,630	6,870	4,260	912	230
3	129	185	185	155	5,060	3,190	7,950	5,590	7,970	4,500	842	330
4	129	170	280	179	4,840	6,260	6,480	7,120	8,950	4,690	716	320
5	129	185	478	185	4,010	6,010	7,630	8,610	9,500	4,500	730	311
6	129	142	349	173	3,480	6,090	9,260	6,260	9,740	4,660	621	252
7	129	142	301	220	3,010	14,700	7,080	5,660	9,260	4,500	530	222
8	129	301	301	145	2,630	13,700	6,300	5,490	8,850	4,170	543	230
9	117	258	478	199	2,460	9,570	7,410	5,980	8,610	3,720	543	198
10	129	156	374	775	2,290	8,250	6,560	5,740	9,260	3,570	588	202

Daily discharge, in second-feet, of Stanislaus River at Knights Ferry, Cal., for 1909–1912— Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
11	129	156	631	515	2,710	6,110	5,560	6,160	7,860	3,710	486	206
12	185	202	844	1,340	2,190	5,010	5,040	6,910	11,300	3,930	508	194
13	258	185	566	5,080	3,540	4,610	4,560	6,420	10,800	3,580	475	190
14	238	202	451	2,560	3,220	4,230	4,260	6,220	10,100	3,650	420	143
15	219	202	399	2,260	2,910	3,960	4,080	5,350	9,920	3,160	448	190
16	219	202	374	949	2,120	3,860	4,110	4,830	10,200	3,480	431	190
17	185	219	301	618	1,830	3,820	4,360	4,630	10,100	3,120	448	155
18	185	185	280	575	1,800	3,860	4,850	4,260	9,970	3,300	373	183
19	185	170	238	657	1,740	4,000	5,450	5,440	9,740	2,990	298	158
20	170	156	219	3,630	1,670	4,140	5,370	6,110	9,500	2,650	330	206
21	185	185	238	3,260	1,610	4,200	5,380	7,190	8,780	2,300	293	183
22	185	170	219	1,580	1,480	4,300	5,880	8,430	7,560	1,990	248	190
23	185	170	219	1,090	1,440	4,410	6,580	9,820	6,700	1,450	302	190
24	156	219	219	7,170	1,440	4,530	7,260	9,870	5,210	1,540	280	176
25	156	202	202	7,510	1,280	4,610	8,020	7,630	4,690	1,700	257	183
26	170	219	185	3,540	1,280	4,770	8,250	6,440	4,850	1,450	248	190
27	170	258	219	2,490	1,320	4,820	7,190	6,500	5,840	1,450	302	226
28	156	219	202	1,900	1,250	5,150	5,790	6,980	6,220	1,300	252	190
29	170	185	185	5,540	.....	5,380	5,100	7,190	5,320	1,220	248	186
30	129	185	185	35,600	.....	5,840	5,180	6,980	4,850	1,140	230	218
31	129	.....	219	36,900	.....	6,420	.....	5,840	.....	1,060	230	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	252	252	330	334	284	180	435	1,520	4,840
2	230	222	275	329	275	169	460	1,420	5,520
3	252	210	302	320	266	176	610	1,420	5,700
4	210	252	302	320	275	198	672	1,330	5,880
5	239	230	275	275	266	270	705	1,520	5,520
6	214	183	360	284	262	405	580	1,620	5,350
7	252	210	230	266	222	705	705	1,620	4,840
8	190	198	275	266	226	640	1,030	2,280	4,200
9	183	214	257	284	230	514	1,030	2,050	3,170
10	190	298	248	329	226	492	1,240	2,640	2,640
11	194	380	284	320	230	460	1,070	3,310	2,640
12	206	345	222	302	266	610	878	3,900	2,770
13	183	370	266	298	230	990	705	4,200	2,640
14	190	335	266	320	218	610	770	4,050	2,520
15	206	330	252	324	222	476	610	4,680	2,160
16	194	345	252	293	222	915	610	5,180	1,940
17	176	345	311	270	248	550	640	5,010	1,830
18	210	370	280	284	230	476	770	5,010	1,830
19	222	370	280	280	222	440	705	5,180	1,830
20	190	360	280	284	222	390	640	4,200	1,830
21	190	320	239	239	298	465	550	3,030	1,620
22	206	330	248	230	239	415	498	2,400	1,240
23	190	330	252	230	270	415	550	1,940	1,030
24	206	360	222	214	206	400	550	2,160	878
25	169	370	222	210	218	405	672	2,280	840
26	186	345	176	298	234	460	770	3,750	672
27	186	345	239	770	194	425	878	3,170	640
28	198	330	302	498	198	450	770	3,170	640
29	206	298	426	390	183	455	1,240	4,840	610
30	210	365	311	329	.....	465	1,620	5,700	672
31	186	.....	325	320	.....	440	.....	4,520	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: Jan. 1–12, 1909, well defined; Jan. 13 to Dec. 31, 1909, well defined below 18,000 second-feet; Jan. 1 to Dec. 31, 1910, well defined; Jan. 1 to Mar. 7, 1911, fairly well defined; Mar. 8 to Dec. 31, 1911, fairly well defined; Jan. 1 to June 30, 1912, well defined. Discharge estimated Aug. 18 to 20, 1910. Discharge interpolated July 29 to Aug. 2, and Aug. 18, 1911.

STANISLAUS & SAN JOAQUIN WATER CO.'S CANAL NEAR KNIGHTS FERRY, CAL.

This canal diverts water from the right bank of Stanislaus River at a point about 3 miles above Knights Ferry. At some distance below the intake the Schell ditch diverts a small quantity of water from the main canal for irrigation. The flow in the ditch, as determined by measurements varies from 0 to 10 second-feet. About half a mile above Knights Ferry is another diversion from the main canal through a pressure pipe to the power house on the bank of the river, and the water thus diverted is used for power and then returned to the river about 1,000 feet above the gaging station on the river.

The gaging station, which is on the main canal below all diversions, is on the Oakdale road about one-half mile from Knights Ferry and about 200 feet below the point where the canal passes under the flume of Schell ditch, in the NW. ¼ sec. 29, T. 1 S., R. 12 E. It was established June 11, 1904.

The determinations of daily discharge of the canal have been combined with those for Stanislaus River at Knights Ferry, Cal.

The gage is a vertical staff on the left bank at a private bridge across the canal about 20 feet below the footbridge from which discharge measurements are made.

The rating curves are well defined and the record is good.

Discharge measurements of Stanislaus & San Joaquin Water Co.'s canal at Knights Ferry, Cal., in 1904–1912.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1904.		*Feet.*	*Sec.-ft.*	1908.		*Feet.*	*Sec.-ft.*
July 22	O. W. Peterson	3.45	105	Oct. 10	W. V. Hardy	1.04	2.7
Aug. 24	do	3.25	91				
24	do	2.95	77	1909.			
24	do	2.80	68	Feb. 16	W. F. Martin	2.10	28
24	do	2.35	45	July 20	W. V. Hardy	3.02	65
24	do	2.20	38	Aug. 19	do	2.98	66
				Nov. 5	do	2.00	22
1905.				1910.			
Mar. 14	F. R. S. Buttemer	2.58	47	Feb. 3	J. E. Stewart	2.60	49
May 23	R. S. Hawley	3.65	114	Mar. 31	do	2.40	40
June 16	do	3.45	96	May 17	do	3.12	78
July 20	do	3.00	77	June 27	do	2.92	63
Sept. 12	C. H. Lee	1.12	5.2	July 16	do	2.78	54
12	do	1.50	8.7	Aug. 27	do	2.02	25
12	do	2.18	33	Nov. 1	W. V. Hardy	2.30	37
12	do	2.08	30				
Oct. 17	R. S. Hawley	.80	.8	1911.			
				May 12	J. E. Stewart	3.70	114
1906.				June 14	W. V. Hardy	3.62	87
May 15	C. H. Lee	3.35	103	July 25	J. E. Stewart	3.52	108
26	W. C. Sawyer	3.48	108	Sept. 19	do	3.38	95
June 15	do	3.60	119				
July 10	do	3.77	132	1912.			
				Apr. 11	J. E. Stewart	3.19	76
1908.				May 28	do	3.63	102
Apr. 29	W. A. Lamb	2.85	72	July 11	do	3.31	82
June 15	W. F. Martin	3.40	102				
Sept. 8	W. V. Hardy	1.92	20				

Daily gage height, in feet, of Stanislaus & San Joaquin Water Co.'s canal near Knights Ferry, Cal., for 1904–1912.

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1904.					1904.				
1	.....	3.45	3.5	3.4	16	3.5	3.3	3.3	3.0
2	.....	2.75	3.45	3.35	17	3.65	3.3	3.3	3.4
3	.....	1.5	3.4	3.3	18	3.6	3.5	3.35	3.5
4	.....	1.7	3.35	3.35	19	3.6	3.5	3.35	3.4
5	.....	2.9	.....	3.3	20	3.6	3.5	3.3	3.4
6	.....	3.25	.....	3.3	21	3.6	3.5	3.3	3.3
7	.....	3.45	.....	3.3	22	3.55	3.5	3.3	3.45
8	.....	3.6	.....	3.2	23	3.6	3.4	3.3	3.35
9	.....	3.45	3.1	3.1	24	3.6	3.2	3.3	3.4
10	.....	3.55	3.35	3.1	25	3.3	3.4	3.3	3.4
11	3.45	3.45	3.4	3.25	26	3.6	3.45	3.3	3.25
12	3.5	3.45	3.35	3.2	27	3.6	3.55	3.4	3.1
13	3.6	3.3	3.35	3.2	28	3.55	3.5	3.1	2.95
14	3.5	3.25	3.4	3.0	29	3.5	3.5	3.3	3.3
15	3.5	3.35	3.35	3.1	30	3.45	3.45	3.35	3.3
					31	.....	3.4	3.35	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904–5.												
1	3.3	2.55	1.9	2.6	2.3	2.3	3.55	3.7	3.7	3.4	3.1	1.95
2	3.35	2.4	2.0	2.4	2.4	2.6	3.7	3.6	3.6	3.45	3.0	2.0
3	3.3	2.4	1.9	2.5	2.05	.0	3.5	3.5	3.6	3.35	3.05	2.1
4	3.35	2.25	1.9	2.5	1.9	.0	3.65	3.5	3.7	3.45	3.05	2.05
5	3.25	2.2	1.8	2.5	.0	.0	3.55	3.55	3.6	3.35	3.1	3.45
6	2.9	2.25	2.2	2.3	2.1	2.3	3.65	3.6	3.6	3.4	3.1	3.3
7	2.95	2.15	2.0	2.5	.0	2.5	3.7	3.5	2.55	3.3	3.1	2.0
8	2.7	2.2	2.15	2.5	.0	2.25	3.65	3.3	3.45	3.4	3.05	2.0
9	2.95	2.0	2.1	2.45	.0	2.55	3.6	3.2	3.6	3.4	3.0	2.1
10	2.95	2.0	2.1	2.45	.0	2.5	3.6	3.3	3.7	3.45	2.95	2.2
11	2.6	2.0	2.15	2.25	.0	3.4	3.55	3.4	3.65	3.3	2.95	2.15
12	2.6	1.9	1.8	2.45	1.45	3.0	3.6	3.45	3.65	3.3	2.95	2.0
13	2.6	1.95	2.3	2.05	.0	2.6	3.5	3.4	3.6	3.3	3.1	2.1
14	2.45	1.9	1.85	2.0	1.8	2.45	3.65	3.45	3.6	3.25	2.8	1.6
15	2.25	1.85	1.8	2.2	1.7	2.45	3.65	3.7	3.5	3.15	2.85	1.6
16	2.3	1.9	1.9	2.15	1.9	2.6	3.7	3.7	3.5	3.35	2.9	1.5
17	2.2	2.1	1.75	2.35	2.3	2.6	3.65	3.55	3.5	3.1	2.7	1.4
18	2.2	2.1	2.0	2.1	2.2	2.5	3.55	3.6	3.5	3.1	2.5	1.4
19	2.1	1.95	1.85	2.1	2.4	2.45	3.6	3.7	3.5	3.0	2.45	1.1
20	2.35	2.15	1.65	2.3	2.0	2.8	3.55	3.65	3.45	3.2	2.3	1.35
21	2.3	1.95	1.6	2.05	2.4	2.6	3.6	3.7	3.55	3.1	2.3	1.5
22	2.25	1.9	1.7	2.2	2.3	2.8	3.6	3.65	3.45	3.0	2.05	1.6
23	2.45	1.85	1.9	2.1	2.0	2.9	3.5	3.65	3.45	3.0	2.1	1.3
24	2.55	2.0	1.5	2.1	2.0	3.0	3.6	3.6	3.45	.0	2.0	1.7
25	2.4	1.9	2.0	2.15	2.0	3.15	3.65	3.65	3.4	2.95	2.05	1.5
26	2.45	1.9	1.6	2.1	.0	3.2	3.7	3.65	3.35	3.0	1.9	1.65
27	2.5	2.1	1.65	2.2	2.25	3.3	3.7	3.6	3.35	3.1	1.85	1.65
28	2.45	1.75	1.8	2.2	2.35	3.35	3.7	3.6	3.35	3.0	1.7	1.7
29	2.4	2.1	1.9	2.3	.....	3.4	3.7	3.6	3.4	2.95	2.15	2.2
30	2.5	1.7	1.75	1.65	.....	3.6	3.7	3.6	3.45	3.1	1.7	2.25
31	2.5	.....	2.3	1.8	.....	3.65	.....	3.65	.....	3.05	1.5	.....
1905–6.												
1	2.8	.....	2.1	2.3	2.9	.....	1.65	3.5	3.6	3.75	2.55	3.4
2	2.65	1.5	2.15	1.9	2.65	.....	1.5	3.5	3.7	3.8	3.3	3.15
3	2.4	1.8	2.2	2.15	2.7	.....	2.0	3.5	3.8	3.7	3.25	3.25
4	2.3	1.5	1.95	2.25	2.75	.....	2.45	3.3	3.7	3.85	2.8	3.2
5	2.2	1.5	2.2	2.25	2.75	.....	2.15	3.4	3.7	3.8	2.95	3.2
6	2.1	1.2	2.1	2.4	2.8	.....	.....	3.4	3.85	3.75	3.4	3.1
7	2.15	.....	2.0	2.4	2.75	.....	.....	3.2	3.6	3.8	3.45	3.2
8	2.2	.....	2.05	2.15	2.8	3.1	.....	3.5	3.8	3.8	3.45	3.1
9	2.05	.....	2.1	2.3	3.1	3.35	3.1	3.7	3.8	3.8	3.4	3.2
10	1.70	.....	2.1	2.25	3.05	3.55	2.1	3.6	3.9	3.5	3.4	3.05
11	1.75	.....	1.8	2.2	3.0	3.2	2.05	3.3	3.8	3.8	3.4	3.0
12	1.85	.....	1.95	2.35	2.5	3.0	2.65	3.5	3.6	2.7	3.3	2.95
13	1.4	.....	2.0	2.45	2.2	2.85	2.7	3.6	3.65	3.75	3.2	2.95
14	1.2	.....	1.85	2.65	2.6	2.7	2.8	3.5	3.7	3.8	3.1	2.9
15	1.0	.....	1.65	2.6	3.0	2.45	3.0	3.55	3.7	3.2	3.15	3.1

Daily gage height, in feet, of Stanislaus & San Joaquin Water Co.'s canal near Knights Ferry, Cal., for 1904–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905–6.												
16	1.4	.....	1.8	2.6	3.05	2.45	3.3	3.35	3.75	2.85	3.3	3.1
17	1.3	.....	2.2	2.75	3.1	2.2	3.4	3.6	3.55	3.2	3.3	2.85
18	1.2	.....	2.1	2.1	3.15	2.2	3.5	3.3	3.6	2.95	3.1	3.1
19	1.3	.....	1.95	2.5	2.75	2.6	3.55	3.6	3.6	3.5	3.2	3.1
20	1.4	.....	2.0	2.2	2.8	3.0	3.6	3.65	3.6	3.0	3.5	3.15
21	1.5	.....	2.0	2.15	2.9	2.8	3.55	3.65	3.6	3.55	3.5	3.2
22	1.55	.....	2.05	1.5	2.8	3.0	3.65	3.75	3.55	2.8	3.4	3.2
23	1.8	.....	1.95	1.35	2.75	3.0	3.35	3.75	3.6	3.6	3.4	3.15
24	1.4	.....	1.25	.....	2.8	2.1	.....	3.75	3.25	3.7	3.4	3.1
25	1.2	.....	1.4	.....	2.45	.....	3.6	3.7	3.6	3.7	3.15	3.05
26	1.3	.....	.9	.....	.....	.....	3.7	3.6	3.7	3.7	3.4	3.0
27	1.6	1.7	2.2	.....	.....	.....	3.6	3.6	.....	3.7	3.3	3.15
28	1.5	1.95	2.3	.....	.....	.....	3.5	3.1	.....	3.2	3.25	3.2
29	1.45	2.0	2.2	.....	.....	.....	3.3	3.3	3.0	3.65	3.2	3.05
30	1.45	1.95	2.3	.....	.....	.....	3.3	3.5	3.25	3.45	3.2	3.2
31	1.4	.....	2.2	2.65	.....	.....	.....	3.5	.....	3.3	3.4	.....
1906–7.												
1	3.1	2.95	2.25	2.2	2.15	1.8	.....	1.5	3.2	3.3	3.35	2.9
2	3.0	2.95	2.35	2.15	2.15	2.15	.....	1.7	2.2	3.4	3.4	3.0
3	3.1	2.95	2.4	1.85	2.2	2.35	.....	2.35	2.3	2.55	3.35	2.8
4	3.05	3.0	2.0	1.8	2.15	1.95	.....	1.85	2.25	3.35	3.4	3.0
5	3.0	3.0	1.5	2.15	1.9	1.95	.....	2.25	2.2	3.35	3.35	3.1
6	2.95	2.9	1.65	2.15	2.0	2.2	.....	2.45	2.3	3.4	3.35	3.1
7	3.0	2.85	1.85	1.9	2.0	1.95	.....	2.45	2.25	3.35	3.1	3.1
8	2.9	2.7	2.1	1.95	1.7	2.2	.....	1.15	2.25	3.4	2.95	3.25
9	3.0	2.9	2.2	1.8	1.7	2.35	.....	.....	3.3	3.4	2.95	3.2
10	3.0	2.95	2.5	2.1	1.95	2.4	2.8	.....	3.3	3.3	2.95	3.2
11	3.05	2.95	1.9	1.65	1.7	2.25	1.8	2.5	3.3	3.4	.....	3.2
12	3.0	2.5	2.05	1.65	1.7	2.45	1.9	2.7	3.3	3.2	.....	3.2
13	3.0	2.5	2.0	2.15	1.8	2.4	2.25	2.1	3.25	3.4	.....	3.2
14	3.15	2.22	1.75	2.1	1.8	2.45	2.25	2.7	3.15	3.35	.....	3.2
15	3.05	1.9	1.6	2.0	1.7	2.4	2.2	2.55	3.3	3.3	.....	3.35
16	3.0	2.12	1.3	2.0	1.7	2.6	2.5	2.75	3.3	3.3	2.2	3.2
17	3.05	2.05	1.9	2.05	1.65	2.2	1.7	2.65	3.25	3.3	2.25	3.2
18	2.9	1.4	1.65	1.95	.....	2.05	2.35	2.75	3.25	3.25	2.6	3.2
19	2.95	1.45	1.4	2.0	.....	3.45	1.1	2.8	3.3	3.2	2.85	3.2
20	2.8	1.7	1.8	2.3	.....	.....	.....	2.6	3.25	3.3	3.1	3.2
21	2.8	1.1	2.35	2.1	.....	.....	.....	2.7	3.25	3.35	2.95	3.2
22	2.85	1.15	2.4	2.2	.....	.....	1.5	2.9	3.25	3.4	3.0	3.2
23	2.9	1.15	2.45	2.1	.....	.....	2.35	2.95	3.4	3.35	2.9	3.2
24	2.9	1.65	2.3	1.9	.....	.....	2.45	2.9	3.35	3.4	3.2	3.2
25	2.9	1.65	1.95	2.15	.....	.....	2.6	2.8	3.4	3.35	3.3	3.1
26	2.95	2.25	1.9	1.9	.....	.....	2.65	3.1	3.4	3.4	3.1	3.2
27	2.9	2.3	2.25	2.1	.....	.....	2.6	3.15	3.4	3.35	3.2	3.25
28	2.9	2.3	2.1	2.2	.....	.....	.....	3.2	3.35	2.5	3.1	3.1
29	2.85	2.35	2.1	2.2	.....	.....	1.95	3.2	3.3	3.3	3.1	3.25
30	2.95	2.15	2.3	1.7	.....	.....	.75	3.2	3.4	3.4	3,2	3.15
31	3.0	.....	2.3	2.05	.....	.....	.....	3.2	.....	3.35	3.1	.....
1907–8.												
1	3.1	2.6	2.05	2.0	1.45	1.45	2.95	3.2	3.45	3.3	3.0	2.55
2	3.0	2.6	1.8	1.95	2.35	1.45	2.95	3.2	3.45	3.4	2.65	2.5
3	3.2	2.45	2.0	1.85	2.35	1.45	2.95	3.4	3.45	3.5	2.65	2.45
4	3.2	1.85	2.0	1.85	1.85	1.5	2.95	3.2	3.4	3.5	2.6	2.0
5	3.0	1.85	2.0	2.45	1.85	1.5	3.0	3.1	3.4	3.4	2.75	2.0
6	3.2	1.65	2.0	2.35	1.95	1.5	3.0	3.1	3.5	3.4	2.75	2.45
7	3.2	1.65	2.2	2.35	1.45	1.5	3.1	3.2	3.55	3.4	2.75	2.45
8	3.1	1.45	1.55	2.35	1.85	1.85	3.3	3.2	3.55	3.4	2.75	1.45
9	3.1	2.2	1.45	2.35	1.95	1.85	.....	3.2	3.55	3.4	3.15	2.65
10	3.1	1.5	1.55	1.95	2.2	1.85	.....	3.3	3.55	3.45	3.1	2.75
11	3.1	1.55	1.65	1.85	2.2	1.45	.....	3.3	3.55	3.4	2.9	2.8
12	3.2	1.6	1.45	1.85	2.2	1.85	.....	3.4	3.55	3.4	2.9	2.65
13	3.3	1.65	1.65	1.85	2.35	1.85	2.9	3.35	3.55	3.4	2.9	2.55
14	3.2	1.45	1.55	1.85	2.35	1.85	2.9	3.4	3.55	3.45	2.9	2.55
15	3.0	1.5	2.45	2.35	2.2	1.85	2.95	3.4	3.6	3.5	2.9	2.65
16	3.0	1.6	1.85	2.35	2.35	1.85	2.95	3.4	3.6	3.5	3.1	2.7
17	3.0	1.65	1.85	2.35	2.35	1.45	3.0	3.4	3.5	3.5	3.15	2.65
18	3.0	1.65	1.5	2.35	2.35	1.45	3.0	3.4	3.5	3.45	3.05	2.65
19	2.9	1.5	1.45	1.85	2.35	1.5	2.7	3.35	3.5	3.1	2.9	2.75
20	2.9	1.5	2.25	1.85	2.35	1.5	3.0	3.3	3.5	3.1	2.85	2.4

Daily gage height, in feet, of Stanislaus & San Joaquin Water Co.'s canal near Knights Ferry, Cal., for 1904–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907–8.												
21	2.95	1.45	1.45	1.85	1.85	1.5	3.0	3.3	.....	3.0	2.85	2.4
22	2.85	1.55	2.25	1.45	1.85	2.2	3.1	3.35	3.6	3.0	2.85	2.45
23	2.85	1.65	1.5	1.45	1.85	2.2	3.25	3.4	.....	2.9	2.7	1.95
24	2.85	1.65	1.85	1.85	1.85	2.35	3.2	3.35	3.0	3.0	2.7	1.85
25	2.85	1.65	1.95	2.2	1.95	2.45	3.2	3.35	3.2	3.0	2.7	1.85
26	2.75	1.65	2.35	2.55	1.65	2.45	3.2	3.55	3.2	2.9	2.7	1.85
27	2.9	1.6	2.2	2.35	1.65	2.5	3.2	3.35	3.2	2.9	2.65	1.4
28	2.9	1.6	2.2	2.45	1.65	2.6	3.2	3.3	3.2	2.9	2.7	1.4
29	2.7	1.65	2.45	2.35	1.5	2.55	3.2	3.3	3.1	2.9	2.7	1.3
30	2.6	1.65	1.45	1.45	.....	2.6	3.25	3.3	3.1	2.9	2.6	1.3
31	2.6	.....	1.45	1.45	.....	2.7	.....	3.35	.....	2 9	2.6	.....
1908–9.												
1	1.4	2.65	1.45	.....	.....	.....	2.65	3.6	3.35	3.4	2.85	2.85
2	1.3	2.65	1.45	.....	.....	.....	2.9	3.7	3.2	3.4	3.15	3.1
3	1.35	2.7	1.45	.....	.....	.....	2.9	3.7	3.2	3.35	2.95	3.1
4	1.3	1.3	1.45	.....	2.6	.....	2.9	3.7	3.4	5.4	2.5	3.95
5	1.3	1.3	1.45	.....	2.6	.....	2.9	3.7	3.35	3.4	2.95	3.3
6	1.3	1.3	1.45	.....	2.45	.....	2.9	3.7	3.4	3.3	3.1	2.95
7	1.3	1.3	1.45	.....	1.95	.....	3.2	3.6	3.35	3.35	3.25	3.05
8	1.3	1.3	1.45	.....	1.95	.....	3.1	3.6	3.3	3.35	3.25	1.5
9	1.3	1.3	1.45	.....	1.45	.....	3.4	3.6	2.3	3.25	3.25	2.95
10	1.3	1.3	1.45	.....	1.45	.....	3.4	3.6	3.0	3.3	3.2	2.9
11	1.3	1.3	1.45	.....	1.45	.....	3.4	5.6	3.25	3.45	3.25	2.9
12	1.3	1.3	1.45	2.5	1.45	.....	3.4	3.6	5.3	2.8	3.15	2.85
13	1.3	1.3	2.35	1.95	1.45	.....	3.4	3.6	3.3	3.3	2.95	2.85
14	1.25	1.3	2.35	1.95	1.45	.....	3.4	3.6	3.3	3.3	2.9	2.8
15	1.25	1.4	2.35	1.95	1.45	.....	3.4	3.6	3.1	3.3	3.05	2.8
16	1.3	1.4	2.25	2.5	1.45	.....	3.4	3.45	3.0	3.2	2.95	2.8
17	1.3	1.3	2.25	2.6	1.45	.....	3.15	3.6	2.8	3.25	3.0	2.7
18	1.85	1.4	2.25	2.8	1.45	.....	2.55	3.45	3.1	3.35	2.9	3.0
19	2.4	1.85	2.25	3.0	1.95	.....	2.95	3.3	3.2	3.2	2.9	2.85
20	2.4	1.85	2.45	3.0	2.45	.....	3.55	3.55	3.2	3.2	2.9	2.8
21	2.4	1.85	2.5	.....	2.45	.....	3.6	3.55	3.2	3.15	2.95	2.95
22	2.4	1.45	2.5	.....	2.45	.....	3.6	3.9	3.05	3.25	2.9	2.95
23	2.4	1.45	.....	.....	.....	.....	3.6	3.6	3.0	3.3	3.0	2.95
24	2.45	1.45	.....	.....	.....	2.55	3.6	3.6	3.1	1.6	2.95	3.0
25	2.6	1.45	.....	.....	.....	2.5	3.65	3.6	3.2	3.2	2.95	3.15
26	2 6	1 45	.....	.....	.....	2.45	3.7	3.6	3.2	3.15	2.75	3.1
27	2.65	1.95	.....	.....	.....	2.45	3.7	3.6	1.6	3.15	2.5	3.0
28	2.65	1.95	.....	.....	.....	2.45	3.75	3.2	2.1	3.2	2.5	2.95
29	2.65	1.95	.....	.....	.....	2.45	3.75	3.5	3.3	3.1	2.9	3.05
30	2.6	1.45	.....	.....	.....	2.0	3.7	3.45	3.3	2.95	2.85	2.9
31	2.6	.....	.....	.....	.....	2.5	.....	3.45	.....	3.0	3.0	.....
1909–10.												
1	2.95	2.7	2.65	2.6	2.6	2.65	2.35	3.3	3.0	3.2	0.7	2.45
2	3.05	2.7	2.7	2.85	2.6	2.75	2.35	3.3	3.4	3.1	.....	2.55
3	2.85	2.85	2.75	2.6	2.55	2.65	2.6	3.45	3.25	3.1	.....	2.55
4	3.2	2.65	2.75	2.55	2.55	2.6	2.45	3.55	3.2	2.85	.65	2.6
5	3.25	2.1	2.7	2.6	2.6	2.7	1.9	3.4	3.1	2.85	2.5	2.5
6	3.25	2.6	2.1	2.55	2.6	1.45	2.1	3.5	3.15	3.05	2.8	2.5
7	3.35	2.65	2.6	2.5	2.55	3.3	1.9	3.45	3.25	3.0	2.8	2.7
8	3.35	2.5	2.65	2.6	2.5	3.3	1.8	3.25	3.4	3.1	2.65	2.55
9	3.25	2.55	2.6	2.6	2.5	2.95	1.9	3.15	3.35	2.9	2.5	2.5
10	3.15	2.6	2.7	2.55	2.55	3.15	2.5	3.15	3.25	3.15	2.55	2.95
11	2.8	2.5	2.65	2.55	2.55	3.15	2.5	3.2	3.25	3.0	2.55	2.85
12	2.85	2.55	2.6	2.55	2.65	3.15	2.45	3.1	3.5	3.0	2.5	2.7
13	3.15	2.4	2.55	2.5	2.7	1.45	2.45	3.05	3.35	2.95	2.5	2.5
14	2.2	2.7	2.55	2.55	2.65	2.8	2.45	3.1	3.45	2.85	2.85	2.4
15	3.0	2.45	2.55	2.55	2.7	2.2	2.5	3.4	3.25	3.05	2.65	2.7
16	2.95	2.5	2.5	2.6	2.6	2.5	2.8	3.35	3.3	3.05	2.65	2.8
17	3.15	2.5	2.6	2.55	2.65	2.5	2.8	3.4	3.3	2.85	2.65	2.8
18	2.85	2.0	2.65	2.55	2.65	2.25	2.8	3.45	3.25	3.0	2.7	2.7
19	2.65	2.4	2.8	2.5	2.7	2.35	2.9	2.95	3.5	2.95	2.05	2.8
20	2.75	2.0	2.6	2.5	2.7	3.15	2.95	3.4	3.45	3.1	2.55	2.6
21	2.85	2.6	2.6	2.5	2.7	2.4	3.2	3.4	3.5	2.6	2.8	2.8
22	2.9	2.0	2.6	.7	2.6	1.85	3.1	3.35	3.55	2.7	2.6	2.7
23	2.7	2.65	2.5	2.6	2.7	2.5	3.3	3.35	3.4	2.9	2.6	2.65
24	3.0	2.4	2.6	2.55	2.6	2.4	3.55	3.4	3.45	2.55	2.6	2.65
25	3.05	2.6	2.65	2.6	2.65	2.45	3.5	2.9	3.4	2.65	2.5	2.65

Daily gage height, in feet, of Stanislaus & San Joaquin Water Co.'s canal near Knights Ferry, Cal., for 1904–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
26	2.7	2.6	2.75	2.55	2.65	1.9	3.2	3.35	3.25	2.95	2.55	2.6
27	2.75	2.5	2.55	2.6	2.7	2.45	2.75	3.45	3.05	2.7	2.6	2.6
28	2.7	2.75	2.55	2.6	2.65	2.35	3.4	3.25	2.4	3.1	2.65	2.5
29	3.15	2.55	2.55	2.6	.....	2.35	3.2	2.5	3.25	2.75	2.65	2.6
30	2.85	2.75	2.45	2.7	.....	2.45	3.35	3.45	3.2	2.6	2.6	2.55
31	2.75	.....	2.8	2.5	.....	2.35	.....	3.4	.....	2.75	2.5	.....
1910–11.												
1	2.45	2.0	2.5	2.45	.....	.....	.....	3.4	3.5	3.6	3.45	3.4
2	2.55	2.45	2.0	2.35	.....	.....	1.3	3.4	3.5	3.6	3.5	3.4
3	2.5	2.5	2.4	2.5	.....	.....	1.3	3.4	3.5	3.6	3.5	.....
4	2.65	2.55	2.6	2.35	.....	.....	2.45	3.4	3.5	3.55	3.5	.....
5	2.6	2.6	2.45	2.5	.....	.....	2.45	3.4	3.5	3.55	3.5	.....
6	2.55	2.6	2.35	2.35	.....	.....	2.7	3.4	3.5	3.6	3.5	3.4
7	2.5	2.6	2.0	2.25	.....	.....	2.7	3.4	3.5	2.92	3.45	3.4
8	2.55	.....	1.85	2.5	.....	.....	2.9	3.45	3.5	3.6	3.5	3.45
9	2.65	.7	1.4	2.35	.....	.....	3.1	3.5	3.5	3.6	3.5	3.4
10	2.6	2.5	2.35	1.95	.....	.....	3.35	3.5	3.5	3.6	3.5	3.4
11	2.55	2.55	2.45	1.8	.....	.....	3.35	3.5	3.5	3.5	3.5	3.4
12	1.95	2.55	1.9	2.25	.....	.....	3.4	3.5	3.5	3.5	3.5	3.4
13	2.5	2.65	2.45	2.5	.....	.....	3.35	3.5	3.5	3.5	3.45	3.4
14	2.55	2.55	1.8	2.25	.....	.....	3.35	3.5	3.5	3.5	3.4	3.4
15	2.5	2.5	2.35	3.1	.....	.....	3.4	3.5	3.5	3.55	3.45	3.4
16	2.6	2.5	2.4	2.8	.....	.....	3.4	3.5	3.5	3.5	3.4	3.4
17	2.6	2.55	2.5	2.65	.....	.....	3.4	3.5	3.5	3.5	3.4	3.3
18	2.55	2.6	2.55	2.6	.....	.....	3.4	3.5	3.5	3.5	3.4	3.3
19	2.5	2.5	2.65	2.55	.....	.....	3.4	3.5	3.5	3.55	3.4	3.35
20	2.45	2.65	2.5	2.6	.....	.....	3.4	3.5	3.5	3.55	3.4	3.3
21	2.5	2.6	2.5	2.5	.....	.....	3.4	3.5	3.5	3.6	3.4	3.3
22	1.95	2.55	2.4	1.9	.....	.....	3.4	3.5	3.5	3.5	3.45	3.3
23	2.5	2.5	2.4	.....	.....	.....	3.4	3.5	3.5	3.5	3.45	3.35
24	2.5	2.5	2.5	.....	.....	.....	3.4	3.5	3.5	3.5	3.4	3.35
25	2.5	2.5	2.7	.....	.....	.....	3.4	3.5	3.5	3.5	3.4	3.3
26	2.5	2.5	2.45	.....	.....	.....	3.4	3.5	3.5	3.5	3.4	3.35
27	2.55	2.65	2.35	.....	.....	.....	3.4	3.5	3.5	3.5	3.45	3.3
28	2.5	2.55	2.45	.....	.....	.....	3.4	3.5	3.5	3.5	3.4	3.3
29	2.6	2.55	2.45	.....	.....	.....	3.4	3.5	3.5	3.5	3.4	3.3
30	2.65	2.5	2.45	.....	.....	.....	3.4	3.5	3.5	3.5	3.4	3.3
31	2.55	.....	2.45	.....	.....	.....	.....	3.5	.....	3.5	3.4	.....

Day.	Oct.	Nov.	Mar.	Apr.	May.	June.	Day.	Oct.	Nov.	Mar.	Apr.	May.	June.
1911–12.							1911–12.						
1	3.3	1.45	1.88	3.3	3.4	3.5	16	3.2	.....	.....	3.3	3.4	3.45
2	3.3	1.85	2.45	3.35	3.4	3.5	17	2.9	.....	2.5	3.3	3.4	3.5
3	3.25	1.45	2.45	3.5	3.4	3.5	18	2.8	.....	2.5	3.3	3.4	3.5
4	3.3	1.45	2.45	.....	3.4	3.5	19	2.5	.....	2.6	3.35	3.4	3.5
5	3.3	1.45	2.45	3.5	3.4	3.5	20	2.5	.....	2.6	3.5	3.4	3.4
6	3.3	1.45	1.32	3.5	3.5	3.5	21	2.5	.....	.....	3.4	3.4	3.5
7	3.25	1.45	.....	3.5	3.5	3.5	22	2.5	.....	2.6	3.4	3.5	3.5
8	3.25	1.45	.....	3.5	3.5	3.5	23	2.5	.....	2.8	3.4	3.45	3.45
9	3.25	1.45	.....	3.5	3.45	3.5	24	2.5	.....	2.8	3.4	3.5	3.5
10	3.2	1.45	.....	3.5	3.45	3.5	25	2.5	.....	2.9	3.4	3.5	3.5
11	3.2	.....	1.3	3.2	3.5	3.5	26	2.5	.....	3.0	3.4	3.5	3.5
12	3.25	.....	1.35	2.9	3.5	3.5	27	2.5	.....	3.0	3.4	3.5	3.5
13	3.2	.....	1.35	2.9	3.45	3.5	28	2.5	.....	.....	3.4	2.48	3.5
14	3.2	.....	.....	3.1	3.5	3.5	29	2.55	.....	3.0	3.4	3.5	3.5
15	3.2	.....	.....	3.3	3.45	3.5	30	2.5	.....	3.1	3.4	3.5	3.5
							31	2.5	.....	3.2	.....	3.5	.....

NOTE.—Canal dry on days for which no gage heights are published except Apr. 1, Sept 5, and Nov 11, 1911, and Feb. 29, Mar. 16, 21, 28, and Apr. 4, 1912, when canal was in operation only part of the day.

Rating tables for Stanislaus & San Joaquin Water Co.'s canal at Knights Ferry, Cal.

Jan. 1 to Dec. 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*	*Feet.*	*Sec.-ft.*
1.50	12	2.10	33	2.70	63	3.20	90
1.60	15	2.20	38	2.80	68	3.30	96
1.70	18	2.30	43	2.90	73	3.40	102
1.80	21	2.40	48	3.00	78	3.50	108
1.90	24	2.50	53	3.10	84	3.60	114
2.00	28	2.60	58				

Jan. 1 to Dec. 31, 1905.[a]

1.00	2.5	1.70	14	2.40	40	3.10	79
1.10	3.5	1.80	17	2.50	45	3.20	85
1.20	5	1.90	20	2.60	50	3.30	91
1.30	6.5	2.00	24	2.70	55	3.40	97
1.40	8	2.10	28	2.80	61	3.50	104
1.50	10	2.20	32	2.90	67	3.60	111
1.60	12	2.30	36	3.00	73	3.70	118

Jan. 1, 1906, to Dec. 31, 1908.[b]

0.70	0	1.60	13	2.50	44	3.30	95
.80	.7	1.70	15	2.60	49	3.40	103
.90	1.5	1.80	17	2.70	54	3.50	111
1.00	2.5	1.90	20	2.80	60	3.60	119
1.10	4.0	2.00	23	2.90	67	3.70	127
1.20	5.5	2.10	27	3.00	74	3.80	135
1.30	7	2.20	31	3.10	81	3.90	143
1.40	9	2.30	35	3.20	88	4.00	151
1.50	11	2.40	39				

[a] This table is based on 9 discharge measurements made during 1905. It is well defined between gage heights 1 foot and 3.7 feet.

[b] This table is not applicable for periods of obstructed channel. It is based on discharge measurements made during 1905–1908 and is fairly well defined.

Daily discharge, in second-feet, of Stanislaus & San Joaquin Water Co.'s canal at Knights Ferry, Cal., for 1899.

Day.	Apr.	May.	June.	July.	Day.	Apr.	May.	June.	July.
1	32.4	65.1	69.2	49.0	16	64.0	72.6	68.2	45.5
2	35.5	62.4	70.9	40.7	17	65.7	75.0	71.9	57.3
3	.0	62.4	69.9	32.7	18	67.1	76.0	68.2	57.0
4	.0	62.4	69.2	33.7	19	69.1	74.2	68.8	57.3
5	69.1	62.4	70.9	32.1	20	70.9	73.6	69.2	54.1
6	.0	69.2	71.2	40.7	21	74.7	72.6	67.1	56.7
7	.0	68.5	71.9	39.1	22	75.9	76.0	65.4	57.7
8	15.2	72.2	71.9	40.7	23	72.5	76.0	65.1	57.0
9	35.9	73.9	71.9	42.6	24	73.3	75.0	64.0	55.1
10	50.6	75.3	73.0	40.7	25	70.9	73.9	55.7	53.5
11	62.0	74.2	73.0	45.5	26	66.8	71.9	50.6	47.1
12	65.4	72.6	.0	62.3	27	67.1	69.2	49.7	61.0
13	65.7	73.9	64.5	61.7	28	67.1	67.4	48.1	56.7
14	65.1	72.2	67.1	55.1	29	67.1	69.2	47.8	.0
15	60.6	70.9	73.0	51.9	30	67.1	69.2	52.9	55.1
					31	.....	65.5	.....	52.9

NOTE.—Daily discharge determined from a gage-height record and a well-defined rating curve.

Daily discharge, in second-feet, of Stanislaus & San Joaquin Water Co.'s canal at Knights Ferry, Cal., for 1909–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	0	0	0	48	108	88	92	58	58
2	0	0	0	61	116	78	92	75	72
3	0	0	0	61	116	78	88	64	72
4	0	46	0	61	116	92	92	41	75
5	0	46	0	61	116	88	92	64	85
6	0	39	0	61	116	92	85	72	64
7	0	22	0	78	108	88	88	82	68
8	0	22	0	72	108	85	88	82	11
9	0	10	0	92	108	33	82	82	64
10	0	10	0	92	108	66	85	78	61
11	0	10	0	92	108	82	96	82	61
12	41	10	0	92	108	85	56	75	58
13	22	10	0	92	108	85	85	64	58
14	22	10	0	92	108	85	85	61	56
15	22	10	0	92	108	72	85	68	56
16	41	10	0	92	96	66	78	64	56
17	46	10	0	75	108	56	82	66	51
18	56	10	0	44	96	72	88	61	66
19	66	22	0	64	85	78	78	61	58
20	66	39	0	104	104	78	78	61	56
21	0	39	0	108	104	78	75	64	64
22	0	39	0	108	132	68	82	61	64
23	0	0	0	108	108	66	85	66	64
24	0	0	44	108	108	72	13	64	66
25	0	0	41	112	108	78	78	64	75
26	0	0	39	116	108	78	75	54	72
27	0	0	39	116	108	13	75	41	66
28	0	0	39	120	78	26	78	41	64
29	0	.....	39	120	100	85	72	61	68
30	0	.....	23	116	96	85	64	58	61
31	0	.....	41	.....	96	.....	66	66	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
1	64	51	48	47	47	50	37	89	69	82	0	41
2	68	51	51	60	47	54	37	89	97	75	0	45
3	58	58	54	47	45	50	47	101	86	75	0	45
4	78	48	54	45	45	47	41	109	82	60	0	47
5	82	26	51	47	47	52	20	97	75	60	43	43
6	82	46	26	45	47	10	27	105	78	72	57	43
7	88	48	46	43	45	89	20	101	86	69	57	52
8	88	41	48	47	43	89	17	86	97	75	50	45
9	82	44	46	47	43	66	20	78	93	63	43	43
10	75	46	51	45	45	78	43	78	93	78	45	66
11	56	41	48	45	45	78	43	82	86	69	45	60
12	58	44	46	45	50	78	41	75	105	69	43	52
13	75	37	44	43	52	10	41	72	93	66	43	43
14	29	51	44	45	50	57	41	75	101	60	60	39
15	66	39	44	45	52	31	43	97	86	72	50	52
16	64	41	41	47	47	43	57	93	89	72	50	57
17	75	41	46	45	50	43	57	97	89	60	50	57
18	58	23	48	45	50	33	57	101	86	69	52	52
19	48	37	56	43	52	37	63	66	105	66	25	57
20	54	23	46	43	52	78	66	97	101	75	45	47
21	58	46	46	43	52	39	82	97	105	47	57	57
22	61	23	46	0	47	18	75	93	109	52	47	52
23	51	48	41	47	52	43	89	93	97	63	47	50
24	66	37	46	45	47	39	109	97	101	45	47	50
25	68	46	48	47	50	41	105	63	97	50	43	50
26	51	46	54	45	50	20	82	93	86	66	45	47
27	54	41	44	47	52	41	54	101	72	52	47	47
28	51	54	44	47	50	37	97	85	39	75	50	43
29	75	44	44	47	.....	37	82	43	86	54	50	47
30	58	54	39	52	.....	41	93	101	82	47	47	45
31	54	.....	56	43	.....	37	.....	97	.....	54	43	.....

Daily discharge, in second-feet, of Stanislaus & San Joaquin Water Co.'s canal at Knights Ferry, Cal., for 1909–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	41	23	43	41	0	0	4	97	105	113	101	97
2	45	41	23	37	0	0	7	97	105	113	105	97
3	43	43	39	43	0	0	7	97	105	113	105	0
4	50	45	47	37	0	0	41	97	105	109	105	0
5	47	47	41	43	0	0	41	97	105	109	105	30
6	45	47	37	37	0	0	52	97	105	113	105	97
7	43	47	23	33	0	0	52	97	105	64	101	97
8	45	0	18	43	0	0	63	101	105	113	105	101
9	50	0	9	37	0	0	75	105	105	113	105	97
10	47	43	37	22	0	0	93	105	105	113	105	97
11	45	45	41	17	0	0	93	105	105	105	105	97
12	22	45	20	33	0	0	97	105	105	105	105	97
13	43	50	41	43	0	0	93	105	105	105	101	97
14	45	45	17	33	0	0	93	105	105	105	97	97
15	43	43	37	75	0	0	97	105	105	109	101	97
16	47	43	39	57	0	0	97	105	105	105	97	97
17	47	45	43	50	0	0	97	105	105	105	97	89
18	45	47	45	47	0	0	97	105	105	105	97	89
19	43	43	50	45	0	0	97	105	105	109	97	93
20	41	50	43	47	0	0	97	105	105	109	97	89
21	43	47	43	43	0	0	97	105	105	113	97	89
22	22	45	39	20	0	0	97	105	105	105	101	89
23	43	43	39	0	0	0	97	105	105	105	101	93
24	43	43	43	0	0	0	97	105	105	105	97	93
25	43	43	52	0	0	0	97	105	105	105	97	89
26	43	43	41	0	0	0	97	105	105	105	97	93
27	45	50	37	0	0	0	97	105	105	105	101	89
28	43	45	41	0	0	0	97	105	105	105	97	89
29	47	45	41	0	.....	0	97	105	105	105	97	89
30	50	43	41	0	.....	0	97	105	105	105	97	89
31	45	.....	41	0	.....	0	.....	105	.....	105	97	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	89	10	0	0	0	19	82	88	94
2	89	10	0	0	0	39	85	88	94
3	86	10	0	0	0	39	94	88	94
4	89	10	0	0	0	39	47	88	94
5	89	10	0	0	0	39	94	88	94
6	89	10	0	0	0	7.4	94	94	94
7	86	10	0	0	0	.0	94	94	94
8	86	10	0	0	0	.0	94	94	94
9	86	10	0	0	0	.0	94	91	94
10	82	10	0	0	0	.0	94	91	94
11	82	5	0	0	0	7	76	94	94
12	86	0	0	0	0	8	61	94	94
13	82	0	0	0	0	8	61	91	94
14	82	0	0	0	0	.0	71	94	94
15	82	0	0	0	0	.0	82	91	94
16	82	0	0	0	0	5.0	82	88	91
17	63	0	0	0	0	41	82	88	94
18	57	0	0	0	0	41	82	88	94
19	43	0	0	0	0	46	85	88	94
20	43	0	0	0	0	46	94	88	88
21	43	0	0	0	0	23	88	88	94
22	43	0	0	0	0	46	88	94	94
23	43	0	0	0	0	56	88	91	91
24	43	0	0	0	0	56	88	94	94
25	43	0	0	0	0	61	88	94	94
26	43	0	0	0	0	66	88	94	94
27	43	0	0	0	0	66	88	94	94
28	43	0	0	0	0	33	88	40	94
29	45	0	0	0	3.5	66	88	94	94
30	43	0	0	0	.....	71	88	94	94
31	43	.....	0	0	.....	76	.....	94	.....

NOTE.—Daily discharge determined from well-defined rating curves applicable as follows: Jan. 1 to Dec. 31, 1909; Jan. 1, 1910, to Dec. 31, 1911; Jan. 1 to June 30, 1912.
Discharge estimated Apr. 1 and Sept. 5, 1911; Feb. 29, Mar. 16, 21, 28, and Apr. 4, 1912.

Monthly discharge of Stanislaus & San Joaquin Water Co.'s canal at Knights Ferry, Cal., for 1899.

Month.	Mean discharge in second-feet.	Run-off (total in acre-feet).
January	10.0	615
February	10.0	555
March	10.0	615
April	53.3	3,170
May	70.8	4,350
June	63.3	3,770
July	49.7	3,060
August	5.0	307
September	5.0	297
The period		16,700
October	2.0	123
November	.0	0
December	.0	0

NOTE.—January to March and August to October, 1899, are estimated.

Monthly discharge of Stanislaus & San Joaquin Water Co.'s canal at Knights Ferry, Cal., for 1907–1912.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1907.					
January	35	14	24.4	1,500	
February	31	0	12.3	683	
March	107	0	22.2	1,360	
April	60	0	18.4	1,090	
May	88	0	49.5	3,040	
June	103	31	80.7	4,800	
July	103	44	94.9	5,840	
August	103	0	65.9	4,050	
September	99	60	84.8	5,050	
The period				27,400	
1907–8.					
October	95	49	73.3	4,510	
November	49	10	17.0	1,010	
December	41	10	20.4	1,250	
January	42	10	26.1	1,600	
February	37	10	24.9	1,430	
March	54	10	22.8	1,400	
April	95	0	67.4	4,010	
May	103	81	95.8	5,899	
June	119	0	98.2	5,840	
July	111	67	91.1	5,600	
August	84	49	62.3	3,830	
September	60	7	37.1	2,210	
The year	119	0	53.0	38,600	
1908–9.					
October	52	6	23.5	1,440	
November	54	7	15.0	893	
December	44	0	15.9	978	
January	66	0	12.3	756	A.
February	46	0	14.8	822	A.
March	44	0	9.84	605	A.
April	120	44	88.6	5 270	A.
May	132	78	106	6,520	A.
June	92	13	73.2	4,360	A.
July	96	13	79.3	4,880	A.
August	82	41	64.5	3,970	A.
September	85	11	62.3	3,710	A.
The year	132	0	47.1	34,200	

Monthly discharge of Stanislaus & San Joaquin Water Co.'s canal at Knights Ferry, Cal., for 1907–1912—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1909–10.					
October	88	29	64.4	3,960	A.
November	58	23	42.5	2,530	A.
December	56	26	46.6	2,870	A.
January	60	0	44.6	2,740	A.
February	52	43	48.4	2,690	A.
March	89	10	47.3	2,910	A.
April	109	17	54.8	3,260	A.
May	109	43	88.7	5,450	A.
June	109	39	89.0	5,300	A.
July	82	45	64.3	3,950	A.
August	60	0	41.6	2,560	A.
September	66	39	49.1	2,920	A.
The year	109	0	56.8	41,140	
1910–11.					
October	50	22	43.4	2,670	A.
November	50	0	41.3	2,460	A.
December	52	9	37.1	2,280	A.
January	75	0	28.5	1,750	B.
February	0	0	.0	0	A.
March	0	0	.0	0	A.
April	97	4	78.8	4,690	A.
May	105	97	103	6,330	A.
June	105	105	105	6,250	A.
July	113	64	106	6,520	A.
August	105	97	100	6,150	A.
September	101	0	85.2	5,070	A.
The year	113	0	60.7	44,200	
1911–12.					
October	89	43	66	4,060	A.
November	10	0	3.5	208	C.
December	0	0	.0	0	A.
January	0	0	.0	0	A.
February	3.5	0	.12	6.9	A.
March	76	0	32.4	1,990	A.
April	94	47	84.3	5,020	A.
May	94	40	89.6	5,510	A.
June	94	88	93.6	5,570	A.
The period				22,400	

Discharge measurements of Schell ditch at Knights Ferry, Cal., in 1904–1911.

Date.	Discharge.	Date.	Discharge.
1904.	*Sec.-feet.*	1909.	*Sec.-feet.*
Aug. 24	7.4	July 20	5.9
		Aug. 19	6.4
1908.			
Sept. 8	6.6	1911.	
Oct. 10	2.7	May 28	10
		July 11	8.8

Combined daily discharge, in second-feet, of Stanislaus River, Stanislaus & San Joaquin Water Co.'s canal, and Schell ditch at Knights Ferry, Cal., for 1910–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910.									
1	6,420	1,960	2,400	3,440	3,860	3,920	686	225	152
2	3,910	1,790	2,460	3,660	3,500	3,720	712	264	156
3	2,910	1,580	2,790	3,590	3,440	3,080	617	264	156
4	2,450	1,530	2,970	3,670	3,360	2,820	602	225	158
5	2,080	1,480	2,920	4,020	2,900	2,110	572	307	205
6	2,020	1,430	2,940	3,870	2,840	1,990	556	192	154
7	1,960	1,580	2,960	4,020	2,650	1,770	526	180	163
8	1,730	1,530	3,020	4,660	4,400	1,680	430	185	156
9	1,730	1,580	3,260	5,200	5,070	1,730	418	178	154
10	1,730	1,680	3,340	5,040	5,250	1,730	433	156	177
11	1,580	1,430	3,410	5,220	4,900	1,770	474	168	171
12	1,480	1,590	3,620	4,200	4,070	1,850	553	205	163
13	1,430	1,490	3,560	4,120	4,230	1,730	497	268	178
14	1,790	1,590	3,680	4,770	4,070	1,590	391	251	150
15	2,020	1,590	3,370	4,770	4,330	1,340	403	212	163
16	3,240	1,580	2,910	5,230	4,020	1,140	427	185	180
17	2,450	1,590	2,910	6,120	3,500	1,180	367	198	412
18	1,850	1,440	3,730	6,320	3,300	1,090	400	200	383
19	1,680	1,590	6,740	6,550	3,330	1,030	421	173	301
20	1,580	1,740	8,080	6,880	3,290	1,270	559	180	223
21	1,480	1,590	6,640	5,940	3,220	1,190	504	180	233
22	1,540	1,480	5,380	5,630	3,360	997	407	170	214
23	1,960	1,740	6,530	6,040	3,940	911	370	158	185
24	3,520	1,580	4,600	6,280	4,090	878	352	158	185
25	3,110	1,690	3,970	6,270	4,060	839	314	154	185
26	2,520	1,690	3,570	6,250	3,500	723	257	168	182
27	2,330	1,740	3,310	6,650	3,370	778	277	158	182
28	2,140	1,860	3,300	7,730	3,930	816	300	161	178
29	2,080	.....	3,100	5,640	3,970	792	279	161	223
30	1,970	.....	3,040	4,570	3,800	719	272	170	180
31	1,900	.....	3,160	.....	3,790	.....	216	154	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	164	214	234	249	12,300	2,200	7,310	5,960	5,900	4,380	1,090	396
2	168	232	214	213	6,990	2,220	7,490	5,730	6,980	4,380	1,020	333
3	178	234	230	204	5,070	3,200	7,960	5,690	8,080	4,620	953	336
4	185	221	333	222	4,850	6,270	6,530	7,220	9,060	4,800	827	326
5	182	238	525	234	4,020	6,020	7,680	8,710	9,610	4,620	841	347
6	180	195	392	216	3,490	6,100	9,320	6,360	9,850	4,780	732	355
7	178	195	330	259	3,020	14,700	7,140	5,760	9,370	4,570	637	325
8	180	307	325	194	2,640	13,700	6,370	5,600	8,960	4,290	654	337
9	173	264	493	242	2,470	9,580	7,490	6,090	8,720	3,840	654	301
10	182	205	417	803	2,300	8,260	6,660	5,850	9,370	3,690	699	305
11	180	207	678	538	2,720	6,120	5,660	6,270	7,970	3,820	597	309
12	213	253	870	1,380	2,200	5,020	5,140	7,020	11,400	4,040	619	297
13	307	241	613	5,130	3,550	4,620	4,660	6,530	10,900	3,690	582	293
14	289	253	474	2,600	3,230	4,240	4,360	6,330	10,200	3,760	523	246
15	268	251	442	2,340	2,920	3,970	4,180	5,460	10,000	3,280	555	293
16	272	251	419	1,010	2,130	3,870	4,210	4,940	10,300	3,590	534	293
17	238	270	350	674	1,840	3,830	4,460	4,740	10,200	3,230	551	250
18	236	238	331	628	1,810	3,870	4,950	4,370	10,100	3,410	476	278
19	234	219	294	708	1,750	4,010	5,550	5,550	9,850	3,100	401	257
20	217	212	268	3,680	1,680	4,150	5,470	6,220	9,610	2,760	433	301
21	234	238	287	3,310	1,620	4,210	5,480	7,300	8,890	2,420	396	278
22	213	221	264	1,610	1,490	4,310	5,980	8,540	7,670	2,100	355	285
23	234	219	264	1,100	1,450	4,420	6,680	9,930	6,810	1,560	409	289
24	205	268	268	7,180	1,450	4,540	7,360	9,980	5,320	1,650	383	275
25	205	251	260	7,520	1,290	4,620	8,120	7,740	4,800	1,810	360	278
26	219	268	232	3,550	1,290	4,780	8,350	6,550	4,960	1,560	351	289
27	221	314	262	2,500	1,330	4,830	7,290	6,610	5,950	1,560	409	321
28	205	270	249	1,910	1,260	5,160	5,890	7,090	6,330	1,410	355	285
29	223	236	232	5,550	.....	5,390	5,200	7,300	5,430	1,330	351	281
30	185	234	232	35,600	.....	5,850	5,280	7,090	4,960	1,250	333	313
31	180	.....	266	36,900	.....	6,430	.....	5,950	.....	1,170	333	.....

Combined daily discharge, in second-feet, of Stanislaus River, Stanislaus & San Joaquin Water Co.'s canal, and Schell ditch at Knights Ferry, Cal., for 1910–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	347	268	336	339	289	204	523	1,620	4,940
2	325	238	281	334	280	213	551	1,520	5,620
3	344	226	308	325	271	220	710	1,520	5,800
4	305	268	308	325	280	242	725	1,430	5,980
5	334	246	281	280	271	314	805	1,620	5,620
6	309	199	366	289	267	417	680	1,720	5,450
7	344	226	236	271	227	710	805	1,720	4,940
8	282	214	281	271	231	645	1,130	2,380	4,300
9	275	230	263	289	235	519	1,130	2,150	3,270
10	278	314	254	334	231	497	1,340	2,740	2,740
11	282	391	290	325	235	472	1,150	3,410	2,740
12	298	351	228	307	271	623	945	4,000	2,870
13	271	376	272	303	235	1,000	772	4,300	2,740
14	278	341	272	325	223	615	847	4,150	2,620
15	294	336	258	329	227	481	698	4,780	2,260
16	282	351	258	298	227	925	698	5,280	2,040
17	245	351	317	275	253	596	728	5,110	1,930
18	273	376	286	289	235	522	858	5,110	1,930
19	271	376	286	285	227	491	796	5,280	1,930
20	239	366	286	289	227	441	740	4,300	1,930
21	239	326	245	244	303	493	644	3,130	1,720
22	255	336	254	235	244	466	592	2,500	1,340
23	239	336	258	235	275	476	644	2,040	1,130
24	255	366	228	219	211	461	644	2,260	982
25	218	376	228	215	223	471	766	2,380	944
26	235	351	182	303	239	531	864	3,850	776
27	235	351	245	775	199	496	972	3,270	744
28	247	336	308	503	203	488	864	3,220	744
29	257	304	432	395	192	526	1,330	4,940	714
30	259	371	317	334	.....	541	1,710	5,800	776
31	235	.....	331	325	.....	521	.....	4,620	.....

NOTE.—These values are the sum of the discharge at the river station, the canal station, and of Schell ditch. Flow in Schell ditch is assumed to be constant at 6 second-feet during 1910–11, 5 second-feet January–March, 1912, 6 second-feet April, 1912, and 10 second-feet May–June, 1912.

Monthly discharge of Stanislaus River at Knights Ferry, Cal., for 1903–1912.

[Drainage area, 935 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1903.							
May	8,210	2,270	3,519	3.76	4.33	216,375	
June	7,130	1,910	3,576	3.82	4.26	212,787	
July	1,700	260	640	.68	.78	39,352	
August	1,300	50	142	.15	.17	8,731	
September	50	25	32	.03	.03	1,904	
The period	.....	.....	.....	.....	.....	479,000	
1903–4.							
October	50	25	44	.05	.06	2,705	
November	2,530	50	638	.68	.76	37,964	
December	440	220	267	.29	.33	16,417	
January	257	132	199	.21	.24	12,236	
February	27,692	217	4,712	5.04	5.44	271,037	
March	30,152	2,977	6,140	6.57	7.57	377,534	
April	10,807	3,357	5,389	5.76	6.43	320,668	
May	15,712	3,587	9,547	10.21	11.77	587,022	
June	8,418	1,611	4,558	4.88	5.44	271,220	
July	2,340	624	1,295	1.39	1.60	79,626	
August	630	201	372	.40	.46	22,873	
September	770	145	261	.28	.31	15,531	
The year	30,152	25	2,785	2.98	40.41	2,010,000	

Monthly discharge of Stanislaus River at Knights Ferry, Cal., for 1903–1912—Contd.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1904–5.							
October	4,370	545	1,174	1.26	1.45	72,186	
November	613	276	412	.44	.49	24,516	
December	1,540	317	436	.47	.54	26,809	
January	1,015	294	642	.687	.79	39,480	
February	4,002	731	1,326	1.42	1.48	73,640	
March	7,394	1,533	2,395	2.56	2.95	147,300	
April	4,625	1,905	2,774	2.97	3.31	165,100	
May	6,445	2,124	3,247	3.47	4.00	99,650	
June	3,296	1,351	2,392	2.56	2.86	142,300	
July	1,309	225	613	.656	.76	37,690	
August	211	97	150	.160	.18	9,223	
September	137	90	103	.110	.12	6,129	
The year	7,394	90	1,305	1.40	18.93	844,000	
1905–6.							
October	138	85	97	.104	.12	5,964	
November	189	77	91	.097	.11	5,415	
December	185	96	131	.140	.16	8,055	
January	14,400	386	2,470	2.64	3.04	152,000	
February	4,290	1,060	2,070	2.21	2.30	115,000	
March	14,900	2,200	5,330	5.70	6.57	328,000	
April	8,110	3,920	5,330	5.70	6.36	317,000	
May	12,200	4,920	8,090	8.65	9.97	497,000	
June	14,400	5,590	9,340	9.99	11.15	556,000	
July	9,600	1,790	5,210	5.57	6.42	320,000	
August	1,600	415	910	.973	1.12	56,000	
September	490	207	309	.330	.37	18,400	
The year	14,900	77	3,282	3.51	47.69	2,380,000	
1906–7.							
October	251	162	193	.206	.24	11,900	
November	551	87	181	.194	.22	10,800	
December	11,400	141	1,270	1.36	1.57	78,100	
January	6,520	820	1,640	1.75	2.02	101,000	B.
February	10,500	2,020	3,560	3.81	3.97	198,000	B.
March	57,200	1,980	10,400	11.12	12.82	640,000	B.
April	11,000	5,740	8,110	8.67	9.67	483,000	C.
May	10,900	5,590	7,690	8.22	9.48	473,000	C.
June	12,200	3,970	7,500	8.02	8.95	446,000	C.
July	7,380	2,420	4,370	4.67	5.38	269,000	C.
August	2,220	453	1,070	1.14	1.31	65,800	B.
September	585	263	378	.404	.45	22,500	B.
The year	57,200	87	3,867	4.13	56.08	2,800,000	
1907–8.							
October	374	241	274	.293	.34	16,800	
November	278	166	206	.220	.25	12,300	B.
December	840	169	353	.378	.44	21,700	B.
January	2,000	305	522	.558	.64	32,100	B.
February	1,220	345	518	.554	.60	29,800	A.
March	1,830	605	1,160	1.24	1.43	71,300	A.
April	3,770	897	2,390	2.56	2.86	142,000	A.
May	3,630	1,530	2,220	2.37	2.73	136,000	A.
June	2,010	728	1,360	1.45	1.62	80,900	A.
July	780	354	501	.536	.62	30,800	A.
August	361	116	208	.222	.26	12,800	A.
September	148	95	117	.125	.14	6,960	A.
The year	3,770	95	819	.876	11.93	593,000	
1908–9.							
October	334	83	126	.135	.16	7,750	
November	239	84	121	.129	.14	7,200	A.
December	277	102	155	.166	.19	9,530	A.
January	36,600	120	5,810	6.21	7.16	357,000	A.
February	11,300	2,280	4,050	4.33	4.51	225,000	B.
March	4,440	1,960	2,670	2.86	3.30	164,000	B.
April	7,290	2,330	4,890	5.23	5.84	291,000	B.
May	8,600	3,750	6,160	6.59	7.60	379,000	A.
June	9,640	3,140	5,600	5.99	6.68	333,000	A.
July	3,580	424	1,440	1.54	1.78	88,500	A.
August	862	196	344	.368	.42	21,200	A.
September	187	101	160	.171	.19	9,520	A.
The year	36,600	83	2,627	2.81	37.97	1,899,000	

Monthly discharge of Stanislaus River at Knights Ferry, Cal., for 1903–1912—Contd.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1909–10.							
October	228	119	179	.191	.22	11,000	A.
November	6,850	141	1,010	1.08	1.20	60,100	A.
December	8,930	744	2,280	2.44	2.81	140,000	A.
January	6,420	1,430	2,280	2.44	2.81	140,000	A.
February	1,960	1,430	1,610	1.72	1.79	89,400	A.
March	8,080	2,400	3,800	4.06	4.68	234,000	B.
April	7,730	3,440	5,210	5.57	6.21	310,000	B.
May	5,250	2,650	3,780	4.04	4.66	232,000	B.
June	3,920	719	1,570	1.68	1.87	93,400	A.
July	712	216	438	.468	.54	26,900	A.
August	307	154	194	.207	.24	11,900	A.
September	412	150	197	.211	.24	11,700	A.
The year	8,930	119	1,879	2.01	27.27	1,370,000	
1910–11.							
October	307	164	211	.226	.26	13,000	A.
November	314	195	241	.258	.29	14,300	A.
December	870	214	356	.381	.44	21,900	A.
January	36,900	194	4,140	4.43	5.11	255,000	B.
February	12,300	1,260	2,930	3.13	3.26	163,000	A.
March	14,700	2,200	5,500	5.88	6.78	338,000	A.
April	9,320	4,180	6,270	6.71	7.49	373,000	A.
May	9,980	4,370	6,600	7.06	8.14	406,000	A.
June	11,400	4,800	8,250	8.82	9.84	491,000	A.
July	4,800	1,170	3,110	3.33	3.84	191,000	A.
August	1,090	330	565	.604	.70	34,700	A.
September	396	246	302	.323	.36	18,000	A.
The year	36,900	164	3,206	3.43	46.51	2,320,000	
1911–12.							
October	347	218	276	.295	.34	17,000	A.
November	391	199	317	.339	.38	18,900	A.
December	432	182	280	.299	.34	17,200	A.
January	775	215	318	.340	.39	19,600	A.
February	303	192	242	.259	.28	13,900	A.
March	1,000	204	504	.539	.62	31,000	A.
April	1,710	523	855	.914	1.02	50,900	A.
May	5,800	1,430	3,300	3.53	4.07	203,000	A.
June	5,980	714	2,720	2.91	3.25	162,000	A.
The period						534,000	

NOTE.—After 1903 these values include the discharge of Stanislaus & San Joaquin Water Co.'s canal and Schell ditch. The flow of Schell ditch has been assumed constant at 7 second-feet 1903–1909; at 6 second-feet 1910–11; 5 second-feet January–March, 1912; 6 second-feet April, 1912; and 10 second-feet May–June, 1912.

STANISLAUS RIVER AT OAKDALE, CAL.

(State Engineering Department station.)

The following information regarding records of discharge of Stanislaus River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

The character of the drainage basin of this river is similar to that of Tuolumne. The discharge is given for the river at Oakdale and no allowance has been made for water diverted from the stream above this point. Regular gage heights were taken for only a small portion of the period covered by the table below, and hence the results given are largely estimates based on the run-off from near-by drainages.

Monthly discharge of Stanislaus River at Oakdale, Cal., for 1878–1884.

[Drainage area, 1,051 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.						
November [a]			42	0.04	0.04	2,499
December [a]			42	.04	.05	2,582
January [a]			525	.50	.58	32,281
February	9,830	350	1,994	1.89	1.97	110,741
March	6,960		4,523	4.30	4.96	278,108
April	7,390	3,260	4,307	4.09	4.56	256,284
May	6,060	2,950	4,098	3.90	4.50	251,976
June	6,720	3,160	4,387	4.17	4.65	261,044
July	2,230	1,320	1,584	1.51	1.74	97,396
August [a]			126	.12	.14	7,747
September [a]			21	.02	.02	1,249
October [a]			21	.02	.02	1,291
The year	9,830		1,810	1.72	23.23	1,300,000
1879–80.						
November [a]			74	.07	.08	4,403
December [a]			630	.60	.69	38,737
January [a]			315	.30	.35	19,369
February [a]			526	.50	.53	30,256
March [a]			630	.60	.69	38,737
April [a]			5,781	5.50	6.14	343,993
May	10,980	4,370	7,251	6.90	7.96	445,846
June	10,820	5,240	7,742	7.37	8.22	460,681
July	4,630	1,680	3,255	3.10	3.57	200,142
August			735	.70	.81	45,193
September			74	.07	.08	4,403
October			32	.03	.03	1,967
The year	10,980		2,250	2.14	29.15	1,630,000
1880–81.						
November [a]			21	.02	.02	1,249
December [a]			630	.60	.69	38,737
January [a]			2,102	2.00	2.31	129,247
February [a]			5,255	5.00	5.21	291,847
March [a]			2,102	2.00	2.31	129,247
April [a]			4,729	4.50	5.02	281,394
May [a]			5,255	5.00	5.76	323,117
June [a]			2,733	2.60	2.90	162,625
July			960	.91	1.05	59,028
August			360	.34	.39	22,136
September			140	.13	.15	8,330
October			120	.11	.13	7,378
The year			2,030	1.93	25.85	1,450,000
1881–82.						
November			150	.14	.16	8,925
December			1,488	1.42	1.64	91,493
January			398	.38	.44	24,472
February			908	.86	.89	50,428
March			4,771	4.54	5.23	293,357
April			3,782	3.60	4.02	225,044
May			5,155	4.91	5.66	316,968
June [a]			5,255	5.00	5.58	312,694
July [a]			1,892	1.80	2.08	116,334
August [a]			105	.10	.12	6,456
September [a]			105	.10	.11	6,248
October [a]			473	.45	.52	29,083
The year			2,040	1.94	26.45	1,480,000
1882–83. [a]						
November			368	.35	.39	21,897
December			210	.20	.23	12,912
January			525	.50	.58	32,281
February			420	.40	.42	23,325
March			840	.80	.92	51,649
April			2,102	2.00	2.23	125,078
May			5,255	5.00	5.76	323,117
June			4,204	4.00	4.46	250,155
July			1,051	1.00	1.15	64,623

[a] Estimated from run-off of neighboring streams and from previous measurements.

Monthly discharge of Stanislaus River at Oakdale, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1882–83.[a]						
August			315	0.30	0.35	19,368
September			210	.20	.22	12,496
October			168	.16	.18	10,330
The year			1,310	1.24	16.89	935,000
1883–84.[a]						
November			210	.20	.22	12,496
December			210	.20	.23	12,912
January			263	.25	.29	16,171
February			3,153	3.00	3.24	181,362
March			4,204	4.00	4.61	258,494
April			4,729	4.50	5.02	281,394
May			4,729	4.50	5.19	290,775
June			5,255	5.00	5.58	312,694
July			4,204	4.00	4.61	258,494
August			1,051	1.00	1.15	64,623
September			210	.20	.22	12,496
October			158	.15	.17	9,715
The year			2,370	2.25	30.53	1,710,000

[a] Estimated from run-off of neighboring streams and from previous measurements.

STANISLAUS RIVER AT OAKDALE, CAL.

(United States Geological Survey station.)

This station was located 1,000 feet below the railroad bridge and half a mile north of the town of Oakdale, Cal., at the same point as one maintained by the State Engineering Department of California from 1878 to 1884. (See p. 341.) The station as first established, May 3, 1895, was at the railroad bridge, but on July 30, 1898, a cable was stretched across the river and a new gage installed at the present location, at J. W. Bell's ranch house, 100 feet below the bridge. The channel of the river is straight for some distance above and below the station, but the bed is of sand and liable to shift at times of sudden change in the volume of the river.

The canal of the Stanislaus Water Co. diverts water from Stanislaus River at a point 3 miles above Knights Ferry, or approximately 15 miles above Oakdale. The volume of this canal at what is known as section 3 was rated on June 1, 1898, by turning in various amounts of water and measuring the same with a meter. It was found on June 6, 1899, that silt had accumulated in the bottom of the flume at the old gage, and a new station was adopted. This point was rated similarly to the one of the year previous. The observations on the gage rod are accurate, but during the spring and fall, when the amount of water which is used for irrigation is not important, it was difficult to obtain accurate reports, because it was of no particular interest to the canal company to record them.

The discharge of the canal is not included in the following tables of river discharge.

Results at this station are considered fairly good.

Discharge measurements of Stanislaus River at Oakdale, Cal., in 1895–1902.

Date.	Hydrographer.	Gage height.	Discharge.
1895.		*Feet.*	*Sec.-feet.*
May 3	J. B. Lippincott	8.85	7,744
July 1	do	6.17	3,754
Aug. 28	do	2.40	279
Oct. 10	do	2.11	192
Nov. 29	do	2.12	147
1896.			
Apr. 17	J. A. Vogleson	5.40	2,801
July 5	C. C. Babb	4.80	2,061
Sept. 7	H. S. Crowe	2.50	304
Oct. 29	J. B. Lippincott	2.40	210
1897.			
Feb. 16	J. B. Lippincott	4.22	1,346
May 30	Lippincott and Cole	8.60	6,754
July 14	A. Q. Campbell	3.20	1,015
Sept. 5	do	2.00	144
Oct. 29	do	2.40	223
Dec. 19	J. B. Lippincott	3.00	429
1898.			
Apr. 17	J. B. Lippincott	5.30	2,203
June 2	do	3.77	912
July 29[a]	do	4.30	73
Oct. 6	do	4.20	50
Dec. 22	do	4.97	362
1899.		*Feet.*	*Sec.-feet.*
Mar. 3	J. B. Lippincott	5.13	487
Apr. 20	S. G. Bennett	8.80	3,873
May 18	do	7.68	2,634
June 5	do	7.94	3,057
8	do	8.42	3,599
28	do	6.3	1,167
Aug. 3	do	4.53	143
Sept. 9	do	4.41	88
Dec. 6	J. B. Lippincott	5.41	531
1900.			
Apr. 5	S. G. Bennett	6.82	1,703
May 19	do	9.33	4,515
June 21	do	6.65	1,438
Aug. 11	do	4.38	66
Sept. 6	do	4.25	35
Dec. 28	do	5.66	611
1901.			
Jan. 29	S. G. Bennett	6.18	965
Oct. 21	do	4.78	189
1902.			
Aug. 20	S. G. Bennett	.....	125

[a] Gage heights after July 29, 1898, refer to a new gage at a different datum.

Daily gage height, in feet, of Stanislaus River at Oakdale, Cal., for 1895–1901.

Day.	June.	July.	Day.	June.	July.	Day.	June.	July.
1895.			1895.			1895.		
1	6.2	6.2	11	8.2	5.3	21	7.1	3.5
2	6.6	6.0	12	7.8	4.7	22	7.3	3.4
3	7.0	6.1	13	7.6	5.1	23	7.7	3.4
4	7.8	5.6	14	7.4	4.8	24	7.9	3.5
5	9.3	5.5	15	7.3	4.6	25	7.7	3.3
6	9.1	5.4	16	7.1	4.5	26	7.5	3.3
7	9.0	5.3	17	6.8	4.4	27	7.3	3.2
8	8.25	5.2	18	6.5	4.1	28	6.9	3.1
9	8.0	5.0	19	6.8	3.8	29	6.7	3.0
10	7.9	4.9	20	7.2	3.6	30	6.5	3.0
						31	.....	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895–96.												
1	.....	2.1	2.2	2.0	3.9	3.7	5.4	5.6	9.9	5.0	2.8	3.6
2	.....	2.1	2.1	2.1	3.8	3.4	5.3	5.6	10.5	4.8	2.7	3.2
3	.....	2.1	2.1	2.1	3.7	3.5	5.2	5.6	9.1	4.7	2.7	2.8
4	.....	2.1	2.1	2.1	3.6	3.4	5.0	5.7	8.2	4.6	2.4	2.6
5	.....	2.1	2.1	2.1	3.6	3.3	4.8	6.3	8.3	4.7	2.7	2.5
6	.....	2.1	2.0	2.1	3.4	3.3	5.6	5.8	8.6	5.7	2.6	2.5
7	.....	2.1	2.0	2.1	3.3	3.3	5.6	5.4	8.7	5.0	2.5	2.5
8	.....	2.1	2.1	2.1	3.3	3.3	5.0	5.3	9.1	4.7	2.5	2.7
9	.....	2.1	2.1	2.1	3.2	3.3	4.9	5.2	9.9	4.9	2.5	2.5
10	2.1	2.1	2.0	2.1	3.2	3.3	5.1	5.0	9.5	4.6	2.5	2.5
11	2.1	2.1	2.0	2.1	3.2	3.2	4.9	5.2	8.6	4.6	2.5	2.5
12	2.1	2.1	2.0	2.0	3.2	3.5	5.0	5.7	9.1	4.3	2.5	2.4
13	2.1	2.1	2.0	2.2	3.1	3.6	5.1	5.4	8.6	4.1	2.5	2.4
14	2.1	2.1	2.0	2.2	3.1	3.7	7.6	5.9	9.0	3.8	2.5	2.3
15	2.0	2.1	2.0	2.2	3.1	3.9	6.3	6.1	8.8	3.7	2.5	2.3
16	2.0	2.1	2.2	2.3	3.1	4.0	5.7	5.9	8.2	3.6	2.4	2.3
17	2.0	2.1	2.2	3.7	3.1	4.8	5.4	6.0	8.4	3.5	2.4	2.3
18	2.0	2.1	2.2	5.9	3.1	4.7	5.1	6.0	7.9	3.7	2.4	2.3
19	2.1	2.1	2.2	6.6	3.2	4.5	4.9	5.7	7.0	3.6	2.4	2.3
20	2.1	2.1	2.3	8.3	3.2	4.9	4.7	5.6	6.9	3.5	2.4	2.3

Daily gage height, in feet, of Stanislaus River at Oakdale, Cal., for 1895–1901—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895–96.												
21	2.1	2.1	2.7	8.3	3.2	6.1	4.7	5.9	7 6	3.4	2.5	2.4
22	2.1	2.1	.....	7.2	3.2	6.6	4.9	6.2	7.5	3.3	2.5	2.4
23	2.3	2.1	.....	5.5	3.2	6.4	5.1	6.8	6.8	3.3	2.4	2.4
24	2.2	2.1	.....	4.9	3.2	6.1	9.3	7.1	7.1	3.2	2.6	2.4
25	2.2	2.1	.....	4.5	3.2	6.3	9.5	7.9	6.5	3.1	2.5	2.4
26	2.1	2.1	.....	4.4	3.3	7.8	7.6	9.0	6.0	3.1	2.4	2.4
27	2.1	2.1	.....	7.7	3.4	11.0	6.4	9.6	6.0	3.1	2.3	2.4
28	2.1	2.1	.....	7.2	3.5	7.3	5.9	10.4	6.0	3.0	2.2	2.4
29	2.1	2.1	.....	5.0	3.8	6.4	5.7	11.5	5.9	3.0	2.2	2.3
30	2.1	2.1	.....	4.5	.....	6.1	5.6	9.9	5.3	2.9	2.3	2.3
31	2.1	.....	.....	3.9	.....	5.7	.....	10.3	.....	2.8	5.1	.....
1896–97.												
1	2.3	2.4	3.0	3.6	8.66	5.0	5.6	8.4	6.6	3.8	2.4	2.2
2	2.3	2.4	3.0	3.3	8.52	4.7	5.0	9.53	6.2	3.9	2.4	2.2
3	2.3	2.4	3.0	3.1	6.1	4.6	4.9	10.11	6.0	4.0	2.4	2.1
4	2.5	2.4	3.0	3.1	11.2	4.5	4.8	10.8	6.0	3.9	2.4	2.1
5	2.2	2.4	2.9	3.0	9.5	4.4	4.9	10.5	5.9	3.8	2.3	2.0
6	2.2	2.3	2.9	3.0	10.0	4.9	5.1	9.53	5.9	3.8	2.3	2.0
7	2.2	2.3	2.9	3.0	6.9	5.5	5.5	8.8	6.0	3.7	2.3	2.0
8	2.2	2.4	2.8	3.0	6.2	5.1	5.6	8.2	6.4	3.5	2.3	2.0
9	2.2	3.8	2.8	3.0	5.5	4.9	5.9	8.5	6.5	3.5	2.3	2.0
10	2.3	3.3	2.8	3.0	5.1	4.6	6.5	8.4	5.8	3.3	2.3	2.0
11	2.3	2.8	2.8	2.9	4.8	4.4	7.0	9.2	5.4	3.1	2.3	2.0
12	2.2	2.6	2.8	2.9	4.8	4.3	7.4	9.42	5.1	3.2	2.2	2.0
13	2.2	2.5	4.5	3.0	4.5	4.3	7.6	9.13	5.2	3.2	2.2	2.0
14	2.2	2.5	4.0	3.83	4.3	4.1	8.2	9.07	5.4	3.2	2.2	2.0
15	2.2	2.5	3.5	3.1	4.2	4.1	8.7	8.77	4.9	3.2	2.2	2.0
16	2.2	2.5	3.5	3.0	4.1	4.1	9.2	8.62	4.5	3.2	2.1	2.0
17	2.2	2.5	3.3	2.9	6.07	4.4	9.8	8.45	4.1	3.2	2.1	1.9
18	2.2	2.6	3.1	2.9	5.0	5.15	10.3	8.2	3.9	3.0	2.1	2.0
19	2.2	2.7	3.0	2.9	5.47	5.13	9.0	8.9	3.9	2.9	2.1	1.9
20	2.2	2.7	3.0	2.9	5.63	4.6	7.9	9.53	3.9	2.8	2.2	1.9
21	2.2	2.9	2.9	2.9	5.0	4.5	7 2	9.03	4.1	2.8	2.3	1.9
22	2.2	3.1	2.9	2.9	4.6	4.3	7.2	9.23	4.0	2.8	2.3	1.9
23	2.2	3.0	2.9	2.9	4.4	4.3	6.8	10.6	3.9	2.7	2.2	1.9
24	2.2	6.7	2.8	2.9	4.3	4.3	6.8	10.1	3.9	2.7	2.2	2.0
25	2.2	5.5	2.8	2.9	4.3	4.5	7.5	9.1	3.9	2.6	2.2	2.0
26	2.2	4.0	2.9	2.9	4.4	4.8	8.7	8.0	3.9	2.6	2.2	2.0
27	2.5	3.6	3.3	2.9	4.5	4.8	9.2	8.0	3.7	2.5	2.2	2.0
28	2.6	3.4	3.4	2.9	5.5	7.4	9.6	8.2	3.6	2.5	2.2	2.0
29	2.4	3.1	3.3	5.15	.....	6.0	8.9	8.2	3.7	2.5	2.2	2.0
30	2.3	3.0	3.2	4.53	.....	5.4	8.8	8.0	3.8	2.5	2.2	1.9
31	2.3	.....	4.3	4.4	.....	5.1	.....	7.7	.....	2.5	2.2	.....
1897–98.												
1	1.9	2.2	2.5	2.5	2.5	3.9	3.1	5.6	3.6	2.8	4.3	4.3
2	2.0	2.2	2.5	2.6	2.4	3.8	3.2	5.1	3.6	2.8	4.4	4.3
3	2.0	2.3	2.5	2.5	2.4	3.7	3.2	4.3	3.3	2.7	4.4	4.3
4	2.0	2.3	2.4	2.7	2.3	3.6	3.2	4.3	3.2	2.5	4.4	4.3
5	2.0	2.2	2.4	2.5	2.3	3.5	3.1	4.1	3.2	2.5	4.3	4.2
6	2.0	2.2	2.3	2.6	2.4	3.5	3.2	4.2	3.5	2.5	4.3	4.2
7	2.0	2.3	2.4	2.7	2.8	3.5	3.3	4.2	3.75	2.5	4.3	4.2
8	2.0	2.3	2.7	2.6	3.4	3.4	3.3	4.3	3.4	2.4	4.3	4.2
9	2.0	2.2	4.4	2.5	3.0	3.4	3.2	4.4	3.5	2.4	4.3	4.2
10	2.0	2.2	3.4	2.5	2.9	3.4	3.6	4.5	3.15	2.4	4.3	4.2
11	2.0	2.2	3.1	2.4	2.8	3.3	3.9	4.7	3.3	2.4	4.3	4.2
12	2.0	2.3	3.0	2.6	2.7	3.1	3.8	4.9	3.4	2.4	4.2	4.2
13	2.0	2.3	3.4	2.6	2.7	3.1	4.1	4.8	3.3	2.4	4.3	4.2
14	2.0	2.2	3.6	2.4	2.7	3.1	4.5	4.9	3.2	2.4	4.2	4.2
15	2.2	2.2	3.2	2.3	2.6	3.0	4.7	4.1	3.2	2.3	4.2	4.2
16	2.3	2.2	3.0	2.4	2.6	2.9	5.2	4.1	3.2	2.2	4.1	4.2
17	2.2	2.2	2.9	2.2	2.5	3.0	5.5	4.9	3.5	2.2	4.2	4.2
18	2.1	2.2	2.8	2.2	2.6	2.9	5.9	4.8	3.7	2.2	4.2	4.2
19	2.1	2.2	2.8	2.3	2.7	3.0	6.0	4.8	3.5	2.2	4.2	4.2
20	2.1	2.2	2.6	2.4	2.6	2.9	5.7	4.8	3.2	2.2	4.2	4.2
21	2.1	2.1	2.8	2.2	2.6	2.9	5.3	4.7	3.0	2.2	4.2	4.2
22	2.2	3.0	2.7	2.1	2.5	2.9	5.3	4.5	3.5	2.2	4.2	4.2
23	2.2	3.1	2.6	2.2	2.6	2.8	4.8	4.3	3.3	2.2	4.2	4.2
24	2.4	3.5	2.4	2.2	2.8	2.8	5.9	4.2	3.1	2.2	4.2	4.3
25	2.5	3.0	2.7	2.3	3.5	2.9	6.5	4.1	3.1	2.2	4.2	4.3

Daily gage height, in feet, of Stanislaus River at Oakdale, Cal., for 1895–1901—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897–98.												
26	2.4	2.8	2.6	2.4	3.2	3.0	6.4	4.0	3.1	2.1	4.3	4.3
27	2.3	2.6	2.5	2.5	3.4	3.0	6.6	3.1	3.1	2.1	4.3	4.4
28	2.3	2.5	2.8	2.3	4.4	2.9	6.1	3.1	3.0	2.1	4.3	4.4
29	2.3	2.4	2.9	2.3	.....	2.8	5.9	3.9	3.0	2.1	4.3	4.3
30	2.2	2.4	2.7	2.4	.....	2.7	5.6	3.8	3.0	4.3	4.3	4.3
31	2.2	.....	2.7	2.5	.....	3.1	.....	3.7	.....	4.3	4.3	.....
1898–99.												
1	4.3	4.3	4.6	4.3	5.0	5.2	7.6	6.6	7.5	6.0	4.6	4.4
2	4.3	4.3	4.6	4.8	5.0	5.1	7.4	6.5	7.6	6.1	4.5	4.4
3	4.4	4.3	4.5	5.6	4.8	5.1	7.2	6.6	7.6	6.0	4.5	4.5
4	4.3	4.3	4.5	4.8	4.8	5.0	7.2	6.5	7.7	5.9	4.5	4.4
5	4.3	4.3	4.5	4.6	4.6	5.0	7.8	6.6	7.6	5.8	4.6	4.4
6	4.3	4.3	4.5	4.5	4.5	4.8	7.8	6.7	8.4	5.6	4.6	4.5
7	4.3	4.3	4.4	4.5	4.5	4.8	8.7	6.8	8.2	5.6	4.8	4.4
8	4.3	4.4	4.4	4.4	4.6	4.7	8.8	7.0	8.5	5.6	4.8	4.4
9	4.3	4.4	4.4	4.4	4.6	4.8	9.6	7.6	8.2	5.5	4.7	4.4
10	4.3	4.3	4.4	5.1	4.6	5.0	9.8	8.0	8.3	5.5	4.6	4.3
11	4.3	4.3	4.4	6.25	4.7	4.8	9.0	9.2	8.5	5.5	4.6	4.4
12	4.3	4.3	4.5	5.4	4.7	4.8	9.0	10.2	9.3	5.4	4.6	4.5
13	4.3	4.3	4.5	5.0	4.7	4.8	8.8	10.0	8.6	5.4	4.6	4.5
14	4.3	4.2	4.4	4.8	4.8	5.0	9.0	9.2	8.3	5.3	4.5	4.4
15	4.3	4.2	4.4	5.0	4.8	5.5	8.8	8.6	8.2	5.1	4.6	4.4
16	4.3	4.2	4.4	4.8	4.7	6.9	9.6	8.6	8.0	5.1	4.5	4.4
17	4.3	4.2	4.4	4.8	4.8	6.0	9.6	8.2	8.4	5.0	4.5	4.4
18	4.3	4.3	4.5	5.0	5.0	5.6	9.1	7.8	8.5	4.9	4.5	4.3
19	4.3	4.3	4.5	5.2	5.3	5.4	8.8	7.4	8.2	4.8	4.5	4.3
20	4.3	4.3	4.6	5.2	5.5	7.8	8.8	7.2	7.6	4.6	4.5	4.3
21	4.3	4.3	4.8	5.5	5.5	6.1	8.9	7.3	7.1	4.6	4.5	4.3
22	4.3	4.3	4.9	5.5	5.4	5.9	9.1	7.5	7.0	4.7	4.5	4.3
23	4.3	4.2	4.7	5.4	5.4	11.1	8.8	7.7	6.9	4.8	4.6	4.2
24	4.4	4.2	4.7	5.4	5.3	13.3	8.6	7.5	6.9	4.8	4.7	4.3
25	4.4	4.3	4.6	5.5	5.2	16.6	8.2	7.1	6.6	4.7	4.4	4.3
26	4.3	4.3	4.6	5.5	5.2	11.7	7.6	6.8	6.6	4.7	4.4	4.2
27	4.3	4.3	4.5	5.5	5.2	10.0	7.4	6.8	6.4	4.7	4.4	4.2
28	4.3	4.3	4.5	5.6	5.2	10.3	7.0	6.8	6.4	4.6	4.4	4.3
29	4.3	4.3	4.5	5.4	.....	9.0	7.0	6.8	6.1	4.7	4.4	4.4
30	4.3	4.3	4.4	5.2	.....	8.6	6.5	7.0	6.0	4.7	4.5	4.4
31	4.3	.....	4.3	5.2	.....	8.0	.....	7.0	.....	4.6	4.4	.....
1899–1900.												
1	4.5	5.0	5.6	7.0	5.8	5.6	7.5	6.4	8.1	6.0	4.5	4.2
2	4.5	4.8	5.6	7.6	5.9	5.6	7.5	6.7	7.8	5.6	4.5	4.2
3	4.4	4.8	5.7	11.2	5.7	5.8	7.2	7.0	7.6	5.6	4.5	4.2
4	4.4	4.6	5.6	10.9	5.7	6.8	7.0	7.4	7.8	5.5	4.5	4.2
5	4.4	4.5	5.4	8.7	5.6	7.2	6.9	8.2	7.5	5.5	4.5	4.2
6	4.4	4.6	5.5	8.2	5.6	6.8	6.8	8.2	7.9	5.4	4.5	4.2
7	4.5	4.4	5.4	8.0	5.5	6.4	6.7	8.5	7.8	5.4	4.5	4.2
8	4.4	4.4	5.4	8.0	5.6	6.6	6.5	8.7	7.7	5.4	4.5	4.2
9	4.5	5.2	5.3	7.8	5.5	6.8	6.7	8.6	8.0	5.3	4.5	4.2
10	4.5	6.4	5.4	7.5	5.5	6.8	6.6	8.6	7.6	5.2	4.4	4.2
11	4.5	7.2	5.4	7.2	5.4	6.8	6.6	8.7	7.4	5.2	4.4	4.2
12	4.5	7.0	5.8	6.8	5.5	7.0	6.7	8.4	7.4	5.2	4.3	4.2
13	4.6	6.8	7.8	6.5	5.5	7.3	6.5	8.0	7.5	5.2	4.3	4.2
14	5.0	6.4	6.0	6.5	5.4	7.7	6.7	7.4	7.3	5.0	4.3	4.2
15	5.0	6.4	7.0	6.5	5.5	7.3	6.5	7.7	7.0	5.0	4.3	4.2
16	4.8	7.4	9.6	6.4	5.5	7.4	6.4	8.1	6.8	5.0	4.3	4.2
17	4.5	7.0	8.8	6.4	5.4	7.3	6.5	8.9	6.7	5.0	4.2	4.2
18	4.4	7.0	8.4	6.2	5.5	7.3	6.9	8.8	6.4	4.9	4.3	4.3
19	4.4	6.8	7.5	6.2	5.6	6.8	6.9	9.1	6.4	4.8	4.4	4.3
20	4.6	6.6	7.0	6.2	5.5	7.0	7.4	9.0	6.6	4.8	4.3	4.4
21	4.8	6.2	6.8	6.2	6.2	7.3	8.0	8.6	6.6	4.8	4.3	4.4
22	5.8	7.0	6.5	6.0	6.0	7.4	7.1	8.6	6.4	4.6	4.2	4.4
23	6.2	6.6	6.3	6.0	5.9	7.5	7.0	8.6	6.4	4.6	4.2	4.4
24	6.0	6.2	6.2	6.0	5.8	7.2	6.9	8.6	6.4	4.6	4.2	4.4
25	5.6	5.8	6.2	6.0	5.8	7.4	6.8	8.3	6.2	4.6	4.2	4.4
26	5.4	6.0	6.0	5.9	5.6	7.3	7.0	8.6	6.0	4.6	4.3	4.4
27	5.2	6.0	6.0	5.8	5.6	7.2	6.7	8.8	6.0	4.5	4.2	4.4
28	5.0	5.8	6.2	5.9	5.5	7.3	6.6	8.9	6.2	4.6	4.2	4.4
29	4.8	5.7	6.0	6.0	.....	6.9	6.6	8.1	6.0	4.5	4.2	4.4
30	5.0	5.8	6.4	5.9	.....	7.0	7.7	8.2	6.0	4.5	4.2	4.4
31	4.8	.....	6.8	5.9	.....	7.2	.....	8.3	.....	4.4	4.3	.....

Daily gage height, in feet, of Stanislaus River at Oakdale, Cal., for 1895–1901—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.
1900-1901.						1900-1901.					
1.....	4.4	5.0	6.2	5.40	6.10	16.....	4.8	6.0	5.6	6.80	6.70
2.....	4.5	5.0	6.4	5.30	6.00	17.....	4.7	6.7	6.0	6.90	.....
3.....	4.7	5.0	6.3	5.40	6.00	18.....	4.7	5.9	5.9	6.60	.....
4.....	5.0	5.1	6.1	5.50	6.10	19.....	5.1	6.1	5.6	6.50	.....
5.....	5.3	5.0	5.9	6.50	6.30	20.....	7.8	6.5	5.5	6.50	.....
6.....	5.2	5.2	5.9	10.50	9.10	21.....	6.4	10.3	5.8	6.40	.....
7.....	5.2	5.0	5.9	15.00	7.70	22.....	6.0	9.7	6.8	6.80	.....
8.....	5.2	5.0	5.9	10.00	7.60	23.....	5.4	9.1	6.4	6.60	.....
9.....	5.0	5.1	5.9	8.00	7.50	24.....	5.4	7.2	6.0	6.40	.....
10.....	4.9	5.1	5.7	7.50	6.90	25.....	5.3	6.6	5.8	6.30	.....
11.....	4.8	5.1	5.6	7.10	6.70	26.....	5.3	6.5	5.9	6.40	.....
12.....	4.8	5.1	5.6	7.00	6.70	27.....	5.2	6.5	5.8	6.40	.....
13.....	4.7	5.2	5.6	7.40	6.70	28.....	5.1	6.4	5.7	6.30	.....
14.....	4.7	5.2	5.6	7.10	6.60	29.....	5.1	6.2	5.6	6.20	.....
15.....	4.7	5.6	5.7	6.90	6.50	30.....	5.2	6.2	5.6	6.10	.....
						31.....	5.0	.....	5.5	6.10	.....

NOTE.—New rod placed July 30, 1898.

Rating tables for Stanislaus River at Oakdale, Cal.

June 1, 1895, to Dec. 31, 1896.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
1.5	75	2.9	520	4.3	1,566	6.4	4,092
1.6	90	3.0	570	4.4	1,658	6.6	4,372
1.7	105	3.1	632	4.5	1,750	6.8	4,656
1.8	120	3.2	694	4.6	1,858	7.0	4,940
1.9	135	3.3	756	4.7	1,966	7.2	5,236
2.0	150	3.4	818	4.8	2,074	7.4	5,532
2.1	184	3.5	880	4.9	2,182	7.6	5,838
2.2	218	3.6	962	5.0	2,290	7.8	6,154
2.3	252	3.7	1,044	5.2	2,534	8.0	6,470
2.4	286	3.8	1,126	5.4	2,778	9.0	8,100
2.5	320	3.9	1,208	5.6	3,028	10.0	10,000
2.6	370	4.0	1,290	5.8	3,284	11.0	12,000
2.7	420	4.1	1,382	6.0	3,540		
2.8	470	4.2	1,474	6.2	3,816		

Jan. 1 to Dec. 31, 1897.

1.5	100	3.0	450	4.5	1,600	7.0	4,510
1.6	110	3.1	516	4.6	1,696	7.2	4,786
1.7	120	3.2	582	4.7	1,792	7.4	5,062
1.8	130	3.3	648	4.8	1,888	7.6	5,340
1.9	140	3.4	714	4.9	1,984	7.8	5,620
2.0	150	3.5	780	5.0	2,080	8.0	5,900
2.1	170	3.6	860	5.2	2,308	8.2	6,184
2.2	190	3.7	940	5.4	2,536	8.4	6,468
2.3	210	3.8	1,020	5.6	2,768	8.6	6,754
2.4	230	3.9	1,100	5.8	3,004	8.8	7,042
2.5	250	4.0	1,180	6.0	3,240	9.0	7,330
2.6	290	4.1	1,264	6.2	3,480	9.5	8,060
2.7	330	4.2	1,348	6.4	3,720	10.0	8,790
2.8	370	4.3	1,432	6.6	3,974	10.5	9,530
2.9	410	4.4	1,516	6.8	4,242	11.0	10,280

Jan. 1 to July 29, 1898.

2.10	74	2.80	384	4.00	1,060	5.40	2,316
2.20	114	2.90	432	4.20	1,216	5.60	2,540
2.30	156	3.00	480	4.40	1,372	5.80	2,780
2.40	198	3.20	592	4.60	1,540	6.00	3,020
2.50	240	3.40	704	4.80	1,720	6.20	3,320
2.60	280	3.60	820	5.00	1,900	6.40	3,620
2.70	336	3.80	940	5.20	2,108		

Rating tables for Stanislaus River at Oakdale, Cal.—Continued.

July 30 to Dec. 31, 1898.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
4.20	50	4.50	130	4.70	205	4.90	315
4.30	74	4.60	165	4.80	255	5.00	385
4.40	100						

Jan. 1 to Dec. 31, 1899.

4.20	50	5.40	620	7.50	2,450	11.00	6,800
4.40	90	5.60	760	8.00	3,020	12.00	8,075
4.60	175	5.80	900	8.50	3,625	13.00	9,350
4.80	265	6.00	1,045	9.00	4,250	14.00	10,625
5.00	370	6.50	1,450	9.50	4,887	15.00	11,900
5.20	485	7.00	1,925	10.00	5,525	16.00	13,175

Jan. 1, 1900, to Feb. 16, 1901.

4.20	30	5.00	310	5.80	820	7.50	2,410
4.40	70	5.20	420	6.00	960	8.00	3,000
4.60	150	5.40	540	6.50	1,350	8.50	3,625
4.80	230	5.60	680	7.00	1,850		

NOTE.—Above gage height 8.5 feet the table for 1900 and 1901 is the same as the 1899 table.

Monthly discharge of Stanislaus River at Oakdale, Cal., for 1895–1900.

[Drainage area, 1,051 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1895.						
June	8,510	3,842	5,686	5.41	6.04	338,340
July	3,842	550	1,778	1.692	1.95	109,330
August	550	145	330	.314	.36	20,304
September	3,161	145	638	.607	.68	37,970
1895–96.						
October	246	145	176	.167	.19	10,802
November	179	179	179	.170	.19	10,651
December	414	145	198	.189	.22	12,208
January	6,956	150	1,806	1.72	1.98	111,058
February	1,208	632	782	.75	.80	45,038
March	12,000	694	2,464	2.35	2.70	151,505
April	9,050	1,966	3,274	3.11	3.48	194,870
May	13,050	2,290	4,717	4.57	5.17	290,092
June	11,000	2,656	6,541	6.22	6.97	389,247
July	3,156	470	1,293	1.23	1.42	79,503
August	2,412	218	385	.37	.42	23,703
September	962	252	332	.32	.35	19,761
The year	13,050	145	1,846	1.76	23.89	1,340,000
1896–97.						
October	370	218	239	.22	.26	14,695
November	4,514	252	705	.67	.75	41,968
December	1,750	470	681	.65	.75	41,904
January	2,251	410	609	.58	.67	37,446
February	10,580	1,264	3,252	3.10	3.23	180,607
March	5,062	1,264	1,915	1.82	2.10	117,750
April	9,234	1,880	5,064	4.81	5.37	301,328
May	9,980	5,480	7,324	6.97	8.04	450,338
June	3,974	860	2,077	1.98	2.21	123,590
July	1,180	250	582	.55	.63	35,786
August	230	170	198	.19	.22	12,175
September	190	140	152	.14	.16	9,045
The year	10,580	140	1,900	1.81	24.39	1,370,000

Monthly discharge of Stanislaus River at Oakdale, Cal., for 1895–1900—Continued.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1897–98.						
October	250	140	176	0.17	0.20	10,822
November	780	170	255	.24	.27	15,174
December	1,516	210	411	.39	.45	25,272
January	336	74	207	.20	.23	12,728
February	1,372	156	389	.37	.39	21,604
March	1,000	336	572	.54	.62	35,171
April	3,920	536	1,813	1.73	1.93	107,881
May	2,540	536	1,378	1.31	1.51	84,730
June	880	480	647	.62	.69	38,499
July	384	74	167	.16	.18	10,268
August	100	27	66	.06	.07	4,058
September	100	50	61	.06	.07	3,630
The year	3,920	27	512	.487	6.61	370,000
1898–99.						
October	100	74	77	.07	.08	4,735
November	100	50	71	.07	.08	4,225
December	315	74	139	.13	.15	8,547
January	1,240	70	457	.44	.51	28,100
February	690	130	355	.34	.35	19,716
March	13,940	220	2,425	2.31	2.66	149,108
April	5,270	1,450	3,525	3.35	3.74	209,752
May	5,780	1,450	2,559	2.43	2.80	157,348
June	4,632	1,045	2,663	2.53	2.82	158,459
July	1,120	175	502	.48	.55	30,867
August	265	90	150	.14	.16	9,223
September	130	50	85	.08	.09	5,058
The year	13,940	50	1,084	1.03	13.99	785,000
1899–1900.						
October	1,200	90	309	.29	.33	19,000
November	2,340	90	1,092	1.04	1.16	64,978
December	5,015	550	1,461	1.39	1.60	89,834
January	7,050	820	1,944	1.85	2.13	119,532
February	1,100	540	700	.67	.70	38,876
March	2,640	540	1,829	1.74	2.01	112,461
April	3,000	1,260	1,761	1.68	1.87	104,787
May	4,377	1,260	3,343	3.18	3.67	205,553
June	3,125	960	1,863	1.77	1.97	110,856
July	960	70	349	.33	.38	21,459
August	110	30	64	.06	.07	3,935
September	70	30	46	.04	.04	2,737
The year	7,050	30	1,231	1.17	15.93	894,000
1900.						
October	2,760	70	448	.43	.49	27,546
November	6,037	310	1,220	1.16	1.29	72,595
December	1,640	610	871	.83	.95	53,556

MIDDLE FORK OF STANISLAUS RIVER AT SAND BAR FLAT, NEAR AVERY, CAL.

This station is located at Sand Bar Flat, about 3 miles below Bakers Crossing, 11 miles above the junction with North Fork of Stanislaus River, and 11 miles southeast of Avery.

The present gage is a vertical staff near the bridge from which discharge measurements are made. The winter flow is not affected by ice. The station is above all diversions. The low-water flow is augmented by storage developed at the Relief reservoir. This reservoir, which is located 1 mile above the mouth of Relief Creek, has a capacity of 16,000 acre-feet.

The following records were furnished by the Sierra & San Francisco Power Co., through Mr. H. F. Jackson, assistant general manager:

Daily discharge, in second-feet, of Middle Fork of Stanislaus River at Sand Bar Flat, near Avery, Cal., for 1905–1910.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1905.		1905.		1905.	
1	89	11	77	21	70
2	87	12	77	22	69
3	83	13	77	23	68
4	83	14	77	24	68
5	82	15	77	25	70
6	82	16	75	26	70
7	82	17	74	27	69
8	82	18	74	28	79
9	79	19	73	29	104
10	77	20	72	30	104

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905–6.												
1	96	64	75	77	225	415	1,320	1,762	2,397	4,011	1,106	340
3	94	63	69	78	234	397	1,120	2,265	2,585	4,365	1,140	308
3	92	64	81	74	249	492	990	2,662	3,225	4,496	1,060	303
4	86	63	78	81	251	410	920	3,220	3,800	4,289	1,027	294
5	83	63	78	79	263	386	900	3,737	3,618	4,217	963	288
6	78	59	81	78	272	413	930	4,149	2,867	3,985	915	281
7	75	59	82	79	279	462	1,000	4,092	2,681	3,691	933	272
8	74	68	84	75	287	539	1,210	4,337	3,025	3,764	858	257
9	72	68	77	78	263	614	1,310	4,355	3,764	3,306	870	258
10	73	64	71	82	267	692	1,520	4,232	4,285	2,932	872	266
11	72	64	66	79	255	761	1,230	4,700	4,782	2,964	857	252
12	71	65	82	98	244	1,459	1,240	3,431	5,380	3,230	812	231
13	71	61	76	350	245	874	1,333	3,165	5,114	3,534	813	222
14	69	60	79	410	280	767	1,538	3,439	4,377	3,225	743	230
15	70	61	77	400	565	717	1,810	3,384	4,243	2,566	651	223
16	71	62	78	230	383	636	2,034	2,871	5,419	2,618	633	208
17	68	64	73	400	355	604	1,989	2,984	4,525	2,238	627	191
18	68	62	63	2,000	356	550	2,147	3,312	4,534	2,229	655	180
19	73	62	86	2,000	678	523	2,001	3,558	4,754	2,037	658	172
20	70	77	83	513	498	538	2,274	3,543	4,779	2,068	663	168
21	70	69	73	358	484	664	2,784	3,308	4,687	2,058	598	168
22	71	50	68	316	440	892	2,994	3,003	4,586	2,121	533	167
23	68	67	54	301	406	1,018	3,303	2,727	4,402	2,326	455	165
24	67	70	70	271	392	1,519	2,151	2,582	4,224	2,253	404	173
25	68	65	98	259	415	1,561	1,772	2,560	4,626	2,319	380	170
26	68	55	88	252	423	1,428	1,662	3,197	3,903	2,028	372	158
27	67	58	98	242	453	1,202	1,912	2,916	3,209	1,986	367	156
28	68	75	83	233	492	1,074	1,682	2,430	2,878	1,701	355	154
29	64	72	76	228	.....	1,040	1,485	2,145	2,931	1,475	351	151
30	66	80	66	218	.....	1,119	1,400	2,063	3,402	1,328	382	150
31	66	.....	69	221	.....	1,880	.....	2,077	.....	1,270	394	.....
1906–7.												
1	151	112	164	192	720	571	1,534	2,730	4,655	3,282	1,540	334
2	154	111	112	187	1,519	578	1,623	2,806	3,881	3,068	1,453	340
3	151	116	115	216	1,165	558	1,446	2,823	4,765	3,355	1,322	340
4	146	137	116	203	1,692	625	1,398	2,596	4,733	3,516	1,169	340
5	141	146	110	192	1,278	845	1,344	2,193	4,367	3,342	1,195	438
6	138	140	109	184	996	952	1,285	2,122	3,943	2,927	1,165	420
7	135	123	112	183	882	671	1,351	2,184	3,318	2,840	1,149	403
8	132	130	128	187	822	642	1,576	2,148	2,730	2,882	1,076	385
9	130	128	128	190	796	630	1,972	2,552	2,814	2,771	957	367
10	128	126	136	179	764	668	2,203	2,854	3,146	2,632	868	350
11	126	125	331	174	761	629	2,425	3,068	3,917	2,623	770	332
12	127	127	175	183	733	588	2,825	2,499	2,902	2,654	777	315
13	124	131	140	176	721	558	3,211	2,128	2,385	2,541	775	297
14	124	130	145	169	716	569	3,506	2,267	2,027	2,261	795	279
15	121	132	146	165	702	551	2,804	2,629	1,802	2,217	838	262

Daily discharge, in second-feet, of Middle Fork of Stanislaus River at Sand Bar Flat, near Avery, Cal., for 1905–1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.												
16	120	131	145	160	712	1,035	2,567	3,038	1,744	2,050	844	244
17	119	128	133	174	716	4,085	2,716	3,372	1,811	1,982	841	237
18	119	120	131	171	672	8,388	2,878	3,769	2,034	2,004	786	231
19	118	110	128	165	692	9,763	3,105	3,733	2,444	2,118	670	224
20	115	96	130	170	649	6,875	3,022	3,332	2,877	2,043	591	220
21	112	120	131	176	695	3,531	2,901	3,208	3,148	1,744	573	216
22	118	120	131	182	768	2,706	2,950	2,977	3,148	1,657	553	212
23	117	111	150	188	695	2,287	3,000	2,436	2,738	1,756	523	209
24	118	102	176	200	668	1,991	3,050	2,595	2,428	1,949	492	205
25	116	120	352	243	724	1,720	3,000	2,960	2,555	1,936	457	201
26	113	114	583	270	663	1,527	3,000	3,083	2,902	1,825	451	197
27	112	94	436	327	606	1,365	2,950	3,183	3,184	1,822	433	193
28	110	117	355	872	570	1,277	2,950	3,415	3,402	1,724	401	188
29	110	108	279	618	.....	1,244	2,938	3,638	4,021	1,763	368	184
30	109	117	243	459	.....	1,288	2,738	3,997	3,702	1,563	336	180
31	108	.....	241	428	.....	1,388	.....	4,036	.....	1,510	351	.....
1907–8.												
1	175	181	93	145	171	222	433	1,544	861	785	281	104
2	170	172	95	154	149	213	401	1,356	869	800	305	104
3	165	157	95	147	184	207	440	1,036	750	821	329	95
4	149	157	94	154	156	197	522	923	731	864	328	104
5	152	147	110	127	153	210	570	801	769	833	360	104
6	155	146	110	142	154	175	657	1,082	896	755	213	104
7	158	141	213	147	160	165	550	1,341	979	752	298	103
8	158	131	135	145	145	189	545	995	1,124	683	266	140
9	158	130	119	151	152	205	538	811	1,167	614	280	110
10	158	134	135	135	140	232	650	955	1,179	542	243	92
11	158	134	165	141	144	251	987	802	1,179	562	226	98
12	162	133	138	143	147	281	1,097	762	1,169	600	232	95
13	166	124	158	153	133	310	1,185	781	1,211	540	211	88
14	157	121	128	190	147	369	1,230	731	1,345	420	206	85
15	166	120	123	154	160	460	1,119	692	1,017	372	202	88
16	174	119	134	163	146	577	990	674	1,094	343	189	90
17	183	111	121	153	148	623	939	699	962	300	210	144
18	191	108	111	146	149	614	940	721	860	270	169	111
19	200	106	128	145	165	592	1,287	912	838	298	176	100
20	218	107	127	147	155	596	1,304	763	715	317	179	87.5
21	217	118	107	217	145	645	1,257	804	625	279	172	98.5
22	215	119	135	214	140	605	1,142	928	645	286	158	86
23	214	104	119	181	140	588	858	1,058	644	346	151	80.5
24	205	106	119	204	142	673	835	1,052	670	280	147	74
25	230	119	124	181	155	718	812	1,387	639	265	175	75.7
26	255	108	139	173	192	602	858	1,275	797	274	136	83
27	280	105	333	174	230	488	1,131	1,136	723	281	141	76.6
28	256	106	225	167	254	455	1,382	1,166	705	286	136	64.8
29	219	100	166	165	216	619	1,394	1,418	723	248	119	69.1
30	210	100	192	173	.....	621	1,514	1,381	707	395	107	66.1
31	198	.....	163	150	.....	443	.....	922	.....	301	107	.....
1908–9.												
1	61.8	79.5	81	79.8	.....	508	603	2,980	3,685	2,075	436	148
2	63.3	78.5	80	75.6	.....	516	719	3,270	4,405	2,395	421	143
3	64	77	89	79.5	.....	591	992	3,412	4,487	2,738	407	139
4	65	75.5	90	79.8	520	757	1,517	3,652	4,620	2,277	403	134
5	67	73	92	109	495	834	1,466	3,850	4,625	1,745	398	122
6	66.5	83	81	665	448	836	966	3,732	3,975	1,600	383	122
7	62.5	73	74	280	475	704	986	3,857	3,620	1,335	374	126
8	60.6	73	85	283	455	593	1,112	3,757	3,372	1,050	260	117
9	60.6	70	85	303	410	589	1,350	3,315	2,952	1,030	260	114
10	59.2	75	77	196	425	690	1,388	3,432	2,485	1,015	265	111
11	60	74	46	165	481	565	1,372	3,035	3,057	1,187	265	127
12	53	72	73	180	660	534	1,285	2,430	3,295	1,288	260	126
13	54	70.5	59.4	.....	723	537	1,497	2,080	2,902	1,400	245	112
14	67	74	88	.....	633	562	1,830	2,112	2,595	1,106	220	109
15	107	66	76	.....	565	607	2,099	2,447	2,872	1,145	210	105
16	115	66	44.9	.....	610	647	2,589	2,435	2,820	1,143	197	103
17	124	66.5	75.8	.....	818	656	2,982	2,392	2,520	1,046	188	100
18	114	66	52.1	.....	926	677	3,122	2,452	2,324	917	181	98
19	99	62	52	.....	804	672	2,961	2,425	2,092	774	178	96
20	90.5	60	59	.....	711	653	2,145	2,745	2,045	577	180	115

Daily discharge, in second-feet, of Middle Fork of Stanislaus River at Sand Bar Flat, near Avery, Cal., for 1905–1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908–9.												
21	87	65	66	.....	660	654	2,102	3,040	2,043	577	181	142
22	74	77.5	73	.....	605	615	1,877	2,730	2,483	810	185	144
23	80.5	89	71	.....	570	583	1,885	2,100	2,785	826	194	108
24	89	86	73.6	.....	555	562	1,996	1,950	3,529	560	198	99
25	90.5	68	64.9	.....	540	538	2,137	1,872	2,923	498	175	99
26	94	78	57.8	.....	520	530	2,455	2,310	3,070	528	159	97
27	94	65.5	64.8	.....	506	526	2,870	2,577	2,390	660	150	93
28	96	66.4	69.4	.....	506	518	2,775	2,852	2,636	593	144	92
29	93	75	68.9	.....	.....	534	2,720	2,307	2,636	379	138	95
30	85	76	66.3	.....	.....	528	2,827	2,125	2,765	429	133	102
31	83	.....	68.6	.....	.....	533	.....	2,852	.....	438	144	.....
1909–10.												
1	101	109	510	1,228	556	607	1,340	1,961	2,845	495	176	117
2	108	116	1,866	1,039	449	724	1,384	1,678	2,810	475	302	118
3	134	118	1,690	800	500	741	1,397	1,708	2,412	562	198	118
4	139	110	1,063	670	502	932	1,414	1,582	2,072	638	175	120
5	136	104	1,038	632	498	1,070	1,573	1,434	1,652	488	148	122
6	118	101	957	606	496	1,065	1,649	1,418	1,335	432	144	119
7	110	117	708	573	503	1,074	1,200	1,596	1,252	388	136	116
8	104	115	712	544	498	1,122	1,866	1,880	1,160	368	128	116
9	101	109	1,097	521	462	1,199	2,164	2,148	1,228	384	124	113
10	98.5	136	1,421	502	466	1,254	2,152	2,366	1,282	411	186	114
11	95.1	143	948	482	457	1,304	2,200	2,316	1,370	490	252	115
12	93.5	138	784	457	463	1,417	1,944	2,071	1,450	438	238	109
13	90.9	121	759	434	481	1,442	1,792	2,113	1,338	418	210	108
14	91.1	122	741	440	501	1,482	1,842	2,082	1,169	350	160	120
15	89	133	781	436	516	1,385	1,746	2,112	975	350	180	189
16	87.5	115	734	444	491	1,210	2,274	2,077	869	342	172	298
17	87	109	712	420	467	1,199	2,360	1,905	862	222	161	374
18	88	140	685	416	474	1,402	3,111	1,729	820	412	152	240
19	88	141	645	417	480	2,494	3,088	1,702	900	600	136	182
20	99	166	619	400	484	4,035	3,323	1,802	988	545	136	162
21	106	1,113	608	406	460	2,306	2,929	1,742	896	425	132	153
22	104	1,570	554	483	446	1,928	2,858	1,960	768	318	131	148
23	101	952	516	705	461	1,719	2,840	2,352	705	270	130	144
24	97.2	727	393	708	447	1,491	2,851	2,552	695	252	130	139
25	97.2	976	368	632	472	1,362	2,850	2,258	705	230	126	143
26	95	938	407	607	509	1,242	2,936	2,402	705	220	124	140
27	94	550	395	596	490	1,176	3,230	2,188	728	219	124	136
28	90	474	363	555	509	1,120	3,549	2,520	725	216	122	136
29	98	428	330	557	.....	1,099	3,175	2,645	708	210	120	130
30	107	488	332	555	.....	1,124	2,488	2,742	510	198	119	129
31	112	.....	612	547	.....	1,190	.....	2,882	.....	186	119	.....

Day.	Oct.	Day.	Oct.	Day.	Oct.
1910.		1910.		1910.	
1	132	4	137	7	144
2	156	5	134	8	142
3	131	6	134		

NOTE.—Record of daily discharge furnished by the Sierra & San Francisco Power Co. Discharge for Sept. 10–15, 1905; Sept. 6–7, 9–15, 17, 18, 20–24, 26–29, Oct. 1, 2, 6, 7, 10, 12, 15–18, 21, 22, 25, 26, and Nov. 18, 1907; and Dec. 20 and 21, 1908, interpolated. Discharge for Apr. 22–28 and Sept. 2–4, 1907, estimated by engineers of the United States Geological Survey. Discharge Jan. 13 to Feb. 3, 1909, was high; no satisfactory estimates could be made. See Stanislaus River at Knights Ferry.

Monthly discharge of Middle Fork of Stanislaus River at Sand Bar Flat, near Avery, Cal., for 1905–1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1905–6.				
October	96	64	73.2	4,500
November	80	50	64.5	3,840
December	98	54	76.8	4,720
January	2,000	74	328	20,200
February	678	225	356	19,800
March	1,880	386	827	50,800
April	3,300	900	1,670	99,400
May	4,700	1,760	3,170	195,000
June	5,420	2,400	3,970	236,000
July	4,500	1,270	2,790	172,000
August	1,140	351	692	42,500
September	340	150	219	13,000
The year	5,420	50	1,190	862,000
1906–7.				
October	154	108	*125	7,690
November	146	94	121	7,200
December	583	109	191	11,700
January	872	160	245	15,100
February	1,690	570	825	45,800
March	9,760	551	1,940	119,000
April	3,510	1,280	2,480	148,000
May	4,040	2,120	2,920	180,000
June	4,760	1,740	3,120	186,000
July	3,520	1,510	2,330	143,000
August	1,540	336	792	48,700
September	438	180	278	16,500
The year	9,760	94	1,280	929,000
1907–8				
October	280	149	189	11,600
November	181	100	125	7,440
December	333	93	140	8,610
January	217	127	161	9,900
February	254	133	161	9,260
March	718	165	424	26,100
April	1,510	401	919	54,700
May	1,540	674	997	61,300
June	1,340	625	886	52,700
July	864	248	475	29,200
August	360	107	208	12,800
September	144	64.8	94.0	5,590
The year	1,540	64.8	398	289,000
1908–9				
October	124	54	80.1	4,930
November	89	60	72.7	4,330
December	92	44.9	71.1	4,370
January (1–12)	665	75.6	208	4,950
February (4–28)	926	410	585	29,000
March	836	508	608	37,400
April	3,120	603	1,890	112,000
May	3,860	1,870	2,790	172,000
June	4,620	2,040	3,070	183,000
July	2,740	379	1,100	67,600
August	436	133	243	14,900
September	148	92	115	6,840
1909–10.				
October	139	87	102	6,270
November	1,570	101	356	21,200
December	1,870	330	753	46,300
January	1,230	400	575	35,400
February	556	446	484	26,900
March	4,040	607	1,380	84,800
April	3,550	1,200	2,320	138,000
May	2,880	1,420	2,060	127,000
June	2,840	510	1,200	71,400
July	638	186	373	22,900
August	302	119	158	9,720
September	374	108	149	8,870
The year	4,040	87	826	599,000

NOTE.—Monthly values computed by engineers of the United States Geological Survey from record of daily discharge furnished by the Sierra & San Francisco Power Co. Accuracy values are not given, as the base data were not furnished.

ROSE CREEK NEAR JUPITER, CAL.

This station, which is located just above the bridge at the trail crossing, in the Stanislaus National Forest, about 2 miles northwest of Jupiter, about 2¾ miles above junction with Stanislaus River, in the SE. ¼ sec. 17, T. 3 N., R. 15 E., was established September 8, 1910.

Eagle Creek enters 1½ miles above and Knight Creek 2½ miles below the station. The area drained by Rose Creek is rough and is covered chiefly with brush with some merchantable timber.

The gage is a vertical staff fastened to a tree on the right bank, 100 feet above the bridge.

Discharge measurements are made by wading near the gage.

The channel is composed of gravel and small bowlders and the current is swift. At low and medium stages the stream is confined to one channel. At extreme high water the left bank is overflowed and a second channel is formed.

This station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of Rose Creek near Jupiter, Cal., in 1910.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-ft.*
Sept. 8	J. E. Stewart	0.02	[a] 0.03
Oct. 25	H. J. Tompkins	.35	1.2
Dec. 10	do	.58	3.9

[a] Estimated.

Daily gage height, in feet, of Rose Creek near Jupiter, Cal., for 1910–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910-11.												
1	0.31	0.41							0.82			
2								1.02	.82			
3												
4	.30		0.77									
5		.42					2.80					
6			.64		2.60			1.05				
7				0.49								
8	.31								.79			
9			.58									
10		.44					1.55				0.52	
11	.48							.92				
12		.59			1.30					0.52		
13			.63							.48		
14							1.38		.70	.49	.28	
15	.35	.47				1.75		.82			.25	
16												
17			.52	1.02	1.35							
18												
19	.37	.52							.58			
20			.51		1.25							

Daily gage height, in feet, of Rose Creek near Jupiter, Cal., for 1910–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
21							1.20				0.25	
22												
23				1.45				0.85				0.25
24			0.50				1.09	.84				
25	0.35						1.09		0.62			
26	.36	0.61						.82				.30
27			.51									
28		.52		1.60								
29	.38	.51										
30			.50									
31						1.60				.28		

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1					0.70				
2						0.55	0.65		
3									
4									
5									0.41
6			0.62		.60		.60		
7									
8			.52						.30
9						.95			
10					.57				
11		0.50							.35
12			.50	0.75		1.00			
13	0.25	.45			.55				
14		.47		.75					
15									
16			.49			1.02	.88		
17					.54				
18						.97	.82		
19		.43							
20				.72	.53				
21						.95			
22				.65			.75		.25
23									
24								0.75	
25									.30
26				1.10					
27					.52		.80	.77	
28						.72			
29				.85					.25
30								.80	
31									

KNIGHT CREEK NEAR JUPITER, CAL.

This station, which is located at the trail ford, 5 miles west of Jupiter, in the Stanislaus National Forest, in the SE. $\frac{1}{4}$ sec. 8, T. 3 N., R. 15 E., was established September 9, 1910.

Knight Creek joins Rose Creek about 2 miles below the gage. Above the station a small amount of water is diverted for irrigation.

The gage is a vertical staff fastened to a large alder on the right bank, 10 feet above the trail crossing.

Discharge measurements are made by wading near the gage.

The bed of the stream is composed of gravel and sand and is smooth at the gaging section. There is one channel at all stages.

This station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of Knight Creek near Jupiter, Cal., in 1910.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-ft.*
Sept. 9	J. E. Stewart	0.20	[a] 0.05
Dec. 10	H. J. Tompkins	.52	.6

[a] Estimated.

Daily gage height, in feet, of Knight Creek near Jupiter, Cal., for 1910–1912.

Day.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.													
1			0.35						0.65	0.4			
2				0.35		3.0	1.7				0.3	0.1	
3													
4									.6				
5			.35		0.5					.35	.35		
6													
7				.4			2.1		.65			.1	
8										.35	.35		
9	0.2												
10		0.3	.4		2.0	1.6	2.0		.6				
11								1.1					
12		.35											
13					1.6				.6		.1		
14				.45									
15		.3					1.9						
16			.45					1.1	.55				
17			.5			1.8		.8			.1		
18				.45	.8		1.2			.35			
19									.6				
20								.8			.1		
21					3.4					.35			
22			.35						.5				
23				.45									
24		.3			3.0			.8					
25							1.2			.35	.1		
26									.5				
27						1.2		.8					0.1
28		.35											
29			.35		3.4								
30				.5			1.6	.65		.35	.1		
31		.35							.5				

NOTE.—Water below gage from about Aug. 11 to Sept. 26, 1911.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	0.1					0.30			0.30
2		0.2	0.45	0.45					
3					0.45		0.30	0.40	
4						.30			
5		.25							
6			.45	.50					
7					.45	.65			
8		.3							.30
9								.40	
10	.2						.50		
11			.45	.50		.50			
12					.45				
13									
14	.2	.3						.40	
15							.40		.20

Daily gage height, in feet, of Knight Creek near Jupiter, Cal., for 1910–1912—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
16			0.45	0.50		0.40			
17	0.2	0.35			0.40				
18							0.40	0.30	
19			.5	.50		.40			
20									
21	.2	.35			.40				
22			.45						0.20
23							.40		
24				.45					
25						.40		.30	
26	.2	.4	.5						
27							.40		
28					.30				
29			.5						.15
30		.45		.45		.30	.50	.30	
31	.2								

SOUTH FORK OF STANISLAUS RIVER NEAR CONFIDENCE, CAL.

This station, which is located at the Sonora-Bridgeport State highway bridge in the Stanislaus National Forest, in the SE. ¼ sec. 17, T. 4 N., R. 18 E., 1½ miles below the mouth of Herring Creek and 15 miles northeast of Confidence, was established October 20, 1911.

Water is diverted about 10 miles below the station to three reservoirs which have been constructed to supply Tuolumne and Sonora with water for domestic use.

The gage is a vertical staff on the left bank at the bridge.

The channel is composed of gravel and bowlders.

The drainage area is about 54 square miles.

The station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been made.

The following discharge measurement was made by H. J. Tompkins:

October 20, 1911: Gage height, 1.35 feet; discharge, 8.7 second-feet.

Daily gage height, in feet, of South Fork of Stanislaus River near Confidence, Cal., for 1911–12.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1		1.65	1.2	1.2	1.60	1 40	1 4	1.9	4.5
2		1.7	1.2	1.2	1.65	1 40	1.4	1.9	4.4
3		1.6	1.2	1.2	1.65	1.40	1.4	1.95	4.5
4		1.62	1.2	1.2	1.65	1.45	1.42	2.0	4.7
5		1.6	1.2	1.2	1.65	1.55	1.48	2.0	4.4
6		1.52	1 22	1.2	1.65	1.6	1.50	2.05	4.4
7		1.52	1.2	1.3	1.60	1.7	1.50	2.10	4.2
8		1.5	1.2	1.3	1.50	1.6	1.65	2.2	3.8
9		1.5	1.2	1.4	1.45	1.6	1.7	2.3	3.2
10		1.5	1.2	1.4	1 45	1.5	1.7	2.5	3.2
11		1.48	1.2	1.4	1.45	1.5	1.7	2.75	3.8
12		1.45	1.2	1.45	1.45	1.5	1.7	3.2	3.4
13		1.48	1.2	1.45	1.45	1.5	1.75	3.4	3.4
14		1.5	1.2	1.6	1.45	1.5	1.7	3.4	3.4
15		1.6	1.2	1.65	1.45	1.5	1.65	3.4	3.2

Daily gage height, in feet, of South Fork of Stanislaus River near Confidence, Cal., for 1911–12—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911-12.									
16	.....	1.35	1.2	1.65	1.45	1.4	1.6	3.6	2.95
17	.....	1.45	1.2	1.65	1.45	1.3	1.65	4.0	2.95
18	.....	1.3	1.2	1.6	1.50	1.3	1.6	3.8	2.9
19	.....	1.35	1.2	1.7	1.55	1.32	1.6	3.8	3.0
20	.....	1.3	1.2	1.7	1.55	1.30	1.55	3.0	3.2
21	1.8	1.3	1.2	1.7	1.50	1.3	1.55	2.95	2.85
22	1.78	1.3	1.2	1.7	1.42	1.35	1.55	2.75	2.6
23	1.72	1.25	1.2	1.7	1.45	1.40	1.55	2.6	2.55
24	1.7	1.25	1.2	1.7	1.45	1.4	1.60	2.6	2.45
25	1.7	1.25	1.2	1.7	1.45	1.4	1.65	2.9	2.45
26	1.7	1.25	1.2	1.7	1.42	1.4	1.70	2.9	2.4
27	1.68	1.22	1.2	1.7	1.40	1.4	1.75	2.9	2.4
28	1.62	1.2	1.2	1.65	1.40	1.4	1.75	3.4	2.4
29	1.62	1.2	1.2	1.6	1.40	1.4	1.85	4.1	2.4
30	1.6	1.2	1.2	1.6	.....	1.4	1.90	4.0	2.4
31	1.62	.....	1.2	1.6	.....	1.4	.....	4.2	.....

SOUTH FORK OF STANISLAUS RIVER NEAR COLUMBIA, CAL.

This station, which is located at the highway bridge at Italian Bar, in the Stanislaus National Forest in the SE. ¼ sec. 33, T. 3 N., R. 15 E., about 5 miles northeast of Columbia, was established September 6, 1910.

Deer Creek enters about 4½ miles above and Fivemile Creek 1½ miles below the gage. About 11 miles above the station water is diverted for domestic use at Sonora and Tuolumne. The low-water flow at the station is controlled by storage.

The gage is a vertical staff fastened to the middle pier of the bridge.

Discharge measurements at low and medium stages are made by wading about 200 feet below the gage. At high stages fair measurements can be made from the bridge.

The banks are high and wooded and not subject to overflow. The channel is composed of gravel, bed rock, and bowlders and appears permanent.

This station is maintained in cooperation with the United States Forest Service.

No estimates of daily or monthly discharge have been prepared.

Discharge measurements of South Fork of Stanislaus River near Columbia, Cal., in 1910.

Date.	Hydrographer.	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-feet.*
Sept. 10	Stewart and Tompkins	0.32	2.4
Oct. 24	H. J. Tompkins	.55	5.2
Dec. 9	.....do	.71	6.9
11	.....do	1.00	21

Daily gage height, in feet, of South Fork of Stanislaus River near Columbia, Cal., for 1910–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	0.45	0.50			5.50		3.50		3.80			
2				0.65	3.60		4.10	2.80				
3								2.40			1.28	
4	.43		0.95					3.10			1.18	
5		.51							4.10		1.00	
6			.72							4.20	.90	
7				.65	2.50			2.70				
8	.41	.54									1.28	
9			.71			5.50			3.90			
10				1.10	2.00		3.30		4.20			
11	.80				2.10		2.80			3.08		
12		.72									.82	0.55
13			.76					3.10				
14					1.90				4.80			.55
15	.56	.62				2.70					.55	
16				1.20								
17			.70		1.65	3.40	2.70		5.00			
18	.57					2.40						
19							3.40					
20		.61	.71		1.65			3.05	5.20			
21												
22	.62					2.40						
23							3.05	4.30				
24			.69			2.40			4.80			
25	.70										.50	
26		.82	.70				2.80					
27								3.40			.50	
28								4.00		1.82		
29	.49	.71				2.80		3.60	4.30			
30						3.40						.55
31			.70	a 7.25		3.50		4.00				

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
1911–12								1911–12							
1								16							
2								17		0.60					
3		0.65						18							
4							0.65	19							
5		.55			0.64			20							
6								21			0.55				
7						1.35		22	0.55						
8								23		.55					
9				0.70				24			.50				
10								25							
11								26							
12					.60			27		.55					
13								28							
14								29			.57				
15							.95	30							
								31						0.70	

a Estimated.

CALAVERAS RIVER AT JENNY LIND, CAL.

This station, which is located at the highway bridge on the Milton road, about one-fourth mile from Jenny Lind post office, 27 miles above junction with San Joaquin River in the SE. ¼ sec. 22, T. 3 N., R. 10 E., was established December 1, 1906, by the United States Weather Bureau, and has been rated by the Geological Survey.

The records are of greatest immediate value in devising protective measures against the flooding of the city of Stockton during the winter.

The station is well up in the foothills, and there are a few small intermittent tributaries below. Cosgrove, Slate, and Bear creeks enter about 5 miles above the station. North and South forks unite about 15 miles above.

No water is diverted immediately above the station. The acquired water rights are for mining and power operations.

The gage, the datum of which has not been changed since the station was established, is a vertical staff in two sections on the right bank.

Discharge measurements are made from the bridge near the gage.

The conditions for obtaining accurate discharge data are not very good. At low stages the stream at the station is about 100 feet wide and 2 feet deep, and the current is very sluggish. A considerable change in flow makes very little difference in the gage height, so that more or less error arises from the fact that the gage record is only to tenths of feet. At low stages measurements can be made at other sections by wading. At flood stages the current is very swift and the channel, which is composed of gravel and cobblestones, shifts slightly.

Records are fair at medium and low stages and poor at high stages.

Discharge measurements of Calaveras River at Jenny Lind, Cal., in 1907–1912.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1907.		*Feet.*	*Sec.-ft.*	1910.		*Feet.*	*Sec.-ft.*
Apr. 18	W. G. Steward	1.70	576	Mar. 29	J. E. Stewart	1.30	493
Sept. 30	W. A. Lamb	.19	26	May 21	do	.07	67
Nov. 4	do	.35	41	June 25	do	− .21	21
				July 15	do	− .47	5.8
1908.				1911.			
Jan. 8	W. A. Lamb	.63	85	Jan. 13	J. E. Stewart	6.15	10,600
Apr. 14	do	.50	68	14	do	3.70	3,420
Dec. 11	W. F. Martin	.30	40	Feb. 23	do	1.24	467
1909.				Mar. 8	do	8.40	29,000
Feb. 15	W. F. Martin	2.80	1,850	8	do	8.75	32,400
May 20	do	.29	93	May 18	do	.44	205
July 22	W. V. Hardy	− .20	8.2	July 28	do	− .30	19
Sept. 1	do	− .40	2	Dec. 1	F. C. Ebert	− .13	43
Nov. 7	do	.00	37	1	Lasley Lee	− .13	43
24	do	.32	99				
1910.				1912.			
Jan. 20	J. E. Stewart	1.31	519	Apr. 10	J. E. Stewart	.03	85
Mar. 12	do	.80	238	May 26	do	.80	364
				July 10	do	− .58	4.6

Daily gage height, in feet, of Calaveras River at Jenny Lind, Cal., for 1907–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.
1907.							1907.						
1	2.4	2.7	2.2	2.5	1.4	0.9	16	2.7	1.8	2.8	2.0	1.0	1.0
2	2.2	5.0	2.2	2.5	1.4	.9	17	2.5	1.9	6.6	1.8	1.0	1.0
3	1.8	4.6	2.2	2.1	1.4	.9	18	3.2	1.8	4.3	1.8	1.0	1.0
4	1.8	4.2	2.1	2.1	1.4	.9	19	3.2	1.8	11.4	1.7	1.0	.8
5	3.2	3.6	3.6	2.1	1.4	.9	20	2.4	1.8	5.0	1.7	1.0	.8
6	2.2	3.0	3.0	2.1	1.4	.9	21	2.4	1.8	5.0	1.7	1.0	.8
7	2.2	2.7	2.6	2.1	1.4	.9	22	2.3	4.8	5.0	1.6	1.0	.8
8	2.7	2.6	2.6	2.0	1.4	.9	23	2.2	3.2	5.0	1.6	1.1	.8
9	3.8	2.6	2.6	2.0	1.2	.9	24	2.2	2.3	5.0	1.5	1.0	.8
10	3.3	2.6	6.6	1.9	1.2	.9	25	2.2	3.2	5.0	1.5	1.0	.8
11	2.6	2.6	5.6	1.9	1.2	1.0	26	2.2	2.4	4.0	1.5	1.0	.8
12	2.3	2.0	4.6	1.9	1.2	1.0	27	2.2	2.4	3.3	1.5	1.0	.8
13	2.3	2.0	4.6	1.9	1.2	1.0	28	2.4	2.2	3.0	1.5	1.0	.8
14	3.0	2.0	3.2	1.9	1.0	1.0	29	3.1	.....	3.0	1.4	1.0	.8
15	3.3	1.8	2.8	2.1	1.0	1.0	30	3.3	.....	2.5	1.4	.9	.8
							31	2.7	.....	2.5	.....	.9	.....

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1907–8.								1907–8.							
1	0.3	1.1	0.9	1.0	0.9	0.5	0.3	16	0.6	1.5	0.8	0.9	0.5	0.4	0.3
2	.3	1.1	.9	1.2	.9	.5	.3	17	.6	1.2	.8	.9	.5	.4	.3
3	.3	1.1	1.0	2.0	.9	.4	.3	18	.6	1.2	.8	.9	.5	.4	.3
4	.3	1.2	1.1	1.6	.9	.4	.3	19	.6	1.2	.8	.8	.5	.4	.3
5	.4	1.0	1.1	1.5	.9	.4	.3	20	.7	1.2	.8	.8	.5	.4	.3
6	.4	1.0	1.0	1.3	.9	.4	.3	21	.6	1.3	.8	.8	.5	.4	.3
7	.6	1.0	.9	1.2	.8	.4	.3	22	.6	1.3	.8	.8	.6	.4	.3
8	.8	1.0	.9	1.0	.8	.4	.3	23	.6	1.3	.7	.8	.6	.4	.3
9	.8	1.0	2.2	1.0	.8	.4	.3	24	.6	1.8	.7	.9	.6	.4	.3
10	.8	1.0	3.0	1.0	.8	.4	.3	25	.6	2.0	.7	.9	.5	.5	.3
11	1.0	1.0	1.4	.9	.8	.4	.3	26	.6	1.4	.7	.9	.5	.5	.3
12	.9	1.0	1.4	.9	.8	.4	.3	27	.7	1.3	.7	.9	.5	.5	.3
13	1.0	.7	1.2	.9	.8	.4	.3	28	.7	1.2	.7	.9	.5	.5	.3
14	1.0	2.9	1.0	.9	.8	.4	.3	29	.9	1.2	.8	.9	.5	.5	.3
15	.8	1.5	.9	.9	.5	.4	.3	30	.9	1.0	.....	.9	.5	.4	.3
								31	1.1	.9	.....	.9	.....	.3	.....

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.
1908–9.								1908–9.							
1	0.2	0.2	0.6	1.8	1.8	1.8	0.7	16	0.2	0.5	3.2	3.0	1.6	0.9	0.3
2	.2	.2	.6	1.8	1.8	1.6	.6	17	.2	.5	2.0	2.8	1.6	.9	.3
3	.2	.2	.5	2.8	1.8	1.6	.6	18	.2	.6	2.0	1.9	1.6	.9	.3
4	.2	.2	.6	3.8	1.8	1.6	.6	19	.2	.5	2.0	1.8	1.6	.8	.3
5	.2	.4	.6	3.1	1.8	1.4	.5	20	.2	.5	2.5	1.8	1.6	.8	.3
6	.2	.9	.6	2.8	1.9	1.4	.4	21	.2	.5	11.0	2.0	1.6	.8	.....
7	.2	.9	1.0	3.0	2.2	1.4	.4	22	.2	.5	3.9	2.0	1.6	.8	.....
8	.2	.9	1.0	3.8	2.2	1.4	.4	23	.2	.5	3.2	1.9	1.6	.8	.....
9	.2	.9	2.8	2.8	1.9	1.2	.4	24	.2	.5	3.0	1.9	1.6	.8	.....
10	.2	1.1	1.7	2.2	1.9	1.2	.4	25	.2	.5	3.5	2.0	1.6	.8	.....
11	.2	1.0	1.4	3.7	1.9	1.0	.4	26	.2	.5	4.2	1.9	1.6	.8	.....
12	.2	1.0	1.4	6.0	1.8	1.0	.4	27	.2	.5	3.2	1.9	1.6	.7	.....
13	.2	1.0	5.4	5.0	1.8	1.0	.3	28	.2	.5	3.2	1.8	1.6	.7	.....
14	.2	.5	5.9	2.0	1.8	.9	.3	29	.2	.5	3.2	.....	1.6	.7	.....
15	.2	.5	5.7	2.0	1.6	.9	.3	30	.2	.5	2.0	.....	2.0	.7	.....
								31	.....	.5	2.0	.....	1.8	.....	.....

Daily gage height, in feet, of Calaveras River at Jenny Lind, Cal., for 1907–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
1909–10.										
1			0.6	4.2	1.0	0.7	1.05	0.45	0.0	−0.28
2			2.7	2.2	.9	.7	1.0	.4		− .3
3			2.0	2.0	.8	.7	.95	.4		− .3
4			1.9	1.5	.8	.7	.9	.35		− .3
5			2.7	1.1	.8	.7	.9	.35		− .32
6			2.0	.7	.8	.7	.85	.35		
7			2.4	.6	1.0	.6	.85	.3		
8			2.2	.6	1.0	.6	.8	.3		
9			6.3	.6	1.0	.6	.75	.3		
10		0.2	2.4	.6	1.1	.5	.75	.25		
11		2.6	2.0	.6	1.0	.5	.8	.25		
12		2.0	2.0	.5	.9	.8	.75	.3		
13		1.0	1.9	.5	.8	.75	.7	.25		
14			1.9	.9	.8	.8	.65	.25		− .32
15			1.9	1.6	.8	.8	.6	.2		− .35
16			1.0	3.3	.8	.8	.6	.2		− .38
17			.9	1.6	.8	.75	.55	.2		− .4
18			.9	1.6	.8	.8	.55	.2		− .45
19			1.0	1.6	.8	.9	.55	.15		− .48
20			.5	1.5	.8	1.25	.5	.15		− .5
21			.5	1.3	.8	2.5	.5	.15		− .5
22			.5	1.3	.8	3.6	.5	.15		− .52
23			.5	1.3	.9	4.4	.45	.15		− .52
24			.5	3.2	.9	2.5	.4	.1		− .55
25		.6	.5	2.0	.9	2.0	.35	.1	− .2	− .55
26		.8	.4	2.2	.7	1.7	.35	.1	− .23	− .55
27		.6	.4	1.8	.7	1.5	.35	.05	− .22	− .58
28		.6	.4	1.7	.7	1.2	.5	.05	− .25	− .58
29		.6	.4	1.3		1.1	.5	.05	− .27	− .58
30		.6	.4	1.0		1.1	.45	.05	− .28	− .6
31			.6	.9		1.05		.0		− .6

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	−0.2	−0.2	0.0	0.0	5.0	2.0	1.0	0.7	0.3	0.0	−0.3	−0.45
2	− .2	− .2	.0	.0	3.2	2.7	1.0	.7	.3	.0	− .35	− .45
3	− .2	− .2	.0	.0	2.8	2.1	1.0	.6	.3	.0	− .35	− .45
4		− .2	.1	.0	2.6	4.65	1.0	.6	.2	.0	− .35	− .45
5		− .2	.1	.0	2.6	4.2	1.3	.6	.2	.0	− .35	− .45
6		− .2	.1	.0	2.4	3.4	2.5	.7	.2	− .1	− .4	− .45
7		− .2	.1	.0	2.0	8.65	2.1	.6	.2	− .1	− .4	− .45
8		− .15	.1	.0	1.8	7.5	1.3	.6	.2	− .1	− .4	− .45
9		− .15	.0	.0	1.6	5.0	1.3	.6	.2	− .1	− .4	− .45
10		− .1	.0	.3	1.5	4.0	2.0	.6	.2	− .15	− .4	− .45
11		− .1	.0	.8	2.5	3.0	1.7	.6	.2	− .15	− .4	− .45
12		− .05	.4	4.0	2.3	2.5	1.3	.5	.1	− .15	− .4	− .45
13		− .05	.2	6.0	3.0	2.1	1.2	.5	.1	− .15	− .4	− .45
14		− .05	.1	4.0	3.1	1.9	1.0	.5	.1	− .15	− .4	− .45
15		.0	.0	3.5	2.5	1.8	1.0	.4	.1	− .15	− .45	− .45
16		− .05	.0	1.4	2.0	1.5	1.0	.4	.1	− .15	− .45	− .45
17		− .05	.0	0.8	1.8	1.4	1.0	.4	.1	− .15	− .45	− .4
18		.0	.0	.7	1.7	1.4	1.0	.4	.1	− .2	− .45	− .4
19		.0	.0	2.6	1.5	1.4	1.0	.4	.1	− .2	− .45	− .4
20		+ .05	.0	3.6	1.4	1.4	.9	.4	.0	− .2	− .45	− .4
21		.05	.0	3.6	1.3	1.4	.9	.4	.0	− .2	− .45	− .3
22		.05	.0	2.6	1.3	1.3	.9	.3	.0	− .25	− .45	− .3
23		.0	.0	1.6	1.3	1.2	.9	.3	.0	− .25	− .45	− .3
24		.0	.0	5.0	1.3	1.2	.8	.3	.0	− .3	− .45	− .25
25		.05	.0	6.0	1.2	1.2	.8	.3	.0	− .3	− .45	− .2
26		.2	.0	3.5	1.1	1.1	.8	.3	.0	− .3	− .45	− .2
27		.15	.0	3.3	1.2	1.1	.8	.3	.0	− .3	− .45	− .2
28		.15	.0	2.5	1.3	1.0	.8	.3	.0	− .3	− .45	− .2
29		.0	.0	2.8		1.0	.8	.3	.0	− .3	− .45	− .2
30		.0	.0	10.0		1.0	.7	.3	.0	− .3	− .45	− .2
31			.0	14.0		1.0		.3		− .3	− .45	

Daily gage height, in feet, of Calaveras River at Jenny Lind, Cal., for 1907–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	−0.2	−0.1	0.0	0.2	0.5	0.0	0.2	0.3	0.2
2	− .2	− .1	.0	.3	.4	.0	.2	.3	.2
3	− .2	− .1	.0	.3	.3	.0	.2	.2	.1
4	− .2	− .1	.0	.3	.3	.0	.2	.2	.1
5	− .2	− .1	.0	.3	.2	.0	.2	.2	.1
6	− .2	− .1	.0	.3	.2	.5	.1	.2	.1
7	− .2	− .1	.0	.3	.2	1.4	.1	.2	.1
8	− .2	− .1	.0	.3	.2	.8	.1	.2	.1
9	− .2	− .1	.0	.3	.2	.6	.1	.2	.0
10	− .2	.0	.0	.3	.2	.5	.2	.2	.0
11	− .2	.0	.0	.3	.1	.4	.8	.2	.0
12	− .2	.0	.0	.4	.1	.3	.7	.2	.0
13	− .2	.0	.0	.4	.0	1.8	.3	.2	.0
14	− .2	.0	.0	.4	.0	1.0	.2	.1	− .1
15	− .15	.0	.0	.3	.0	.9	.2	.1	− .1
16	− .15	.0	.0	.3	.0	1.4	.2	.1	− .1
17	− .15	.0	+ .1	.3	.0	.7	.2	.1	− .1
18	− .15	.0	.1	.3	.0	.5	.2	.0	− .1
19	− .15	.0	.1	.3	.0	.4	.2	.0	− .1
20	− .1	.0	.1	.3	.0	.3	.2	.0	− .1
21	− .1	.0	.1	.3	.0	.3	.2	.0	− .2
22	− .1	.0	.1	.3	.0	.3	.2	.0	− .2
23	− .1	.0	.1	.3	.0	.2	.2	.0	− .2
24	− .1	.0	.1	.3	.0	.2	.2	.0	− .2
25	− .1	.0	.1	.3	.0	.2	.2	.0	− .2
26	− .1	.0	.1	.3	.0	.2	.2	.4	− .2
27	− .1	.0	.1	1.5	.0	.2	.2	.5	− .3
28	− .1	.0	.1	.6	.0	.2	.2	.3	− .3
29	− .1	.0	.1	.5	.0	.2	.2	.2	− .3
30	− .1	.0	.2	.5	.....	.2	.3	.2	− .3
31	− .1	.....	.2	.5	.....	.2	.....	.2	.....

NOTE.—Channel entirely dry from July 15 to some time after Sept. 15, 1908. Gage heights May 21 to Nov. 10, 1909, and Nov. 14–24, 1909, are known to be more or less in error and are not published. No record was kept Aug. 1 to Sept. 30, 1910, nor during most of the month of October, 1910. Probably no flow during most of the months of August and September, 1910.

Daily discharge, in second-feet, of Calaveras River at Jenny Lind, Cal., for 1907–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	Jnue.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.
1907.							1907.						
1	1,240	1,650	1,010	1,370	382	160	16	1,650	653	1,800	820	194	194
2	1,010	6,600	1,010	1,370	382	160	17	1,370	734	12,400	653	194	194
3	653	5,460	1,010	910	382	160	18	2,440	653	4,710	653	194	194
4	653	4,480	910	910	382	160	19	2,440	653	40,200	577	194	130
5	2,440	3,210	3,210	910	382	160	20	1,240	653	6,600	577	194	130
6	1,010	2,110	2,110	910	382	160	21	1,240	653	6,600	577	194	130
7	1,010	1,650	1,510	910	382	160	22	1,120	6,010	6,600	507	194	130
8	1,650	1,510	1,510	820	382	160	23	1,010	2,440	6,600	507	233	130
9	3,620	1,510	1,510	820	277	160	24	1,010	1,120	6,600	442	194	130
10	2,620	1,510	12,400	734	277	160	25	1,010	2,440	6,600	442	194	130
11	1,510	1,510	8,600	734	277	194	26	1,010	1,240	4,040	442	194	130
12	1,120	820	5,460	734	277	194	27	1,010	1,240	2,620	442	194	130
13	1,120	820	5,460	734	277	194	28	1,240	1,010	2,110	442	194	130
14	2,110	820	2,440	734	194	194	29	2,270	.....	2,110	382	194	130
15	2,620	653	1,800	910	194	194	30	2,620	.....	1,370	382	160	130
							31	1,650	.....	1,370	.....	160	.....

Daily discharge, in second-feet, of Calaveras River at Jenny Lind, Cal., for 1907–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907–8.												
1			37	233	160	194	160	63	37			
2			37	233	160	277	160	63	37			
3			37	233	194	820	160	48	37			
4			37	277	233	507	160	48	37			
5			48	194	233	442	160	48	37			
6			48	194	194	327	160	48	37			
7			82	194	160	277	130	48	37			
8			130	194	160	194	130	48	37			
9			130	194	1,010	194	130	48	37			
10			130	194	2,110	194	130	48	37			
11			194	194	382	160	130	48	37			
12			160	194	382	160	130	48	37			
13			194	104	277	160	130	48	37			
14			194	1,950	194	160	130	48	37			
15			130	442	160	160	63	48	37			
16			82	442	130	160	63	48	37			
17			82	277	130	160	63	48	37			
18			82	277	130	160	63	48	37			
19			82	277	130	130	63	48	37			
20			104	277	130	130	63	48	37			
21			82	327	130	130	63	48	37			
22			82	327	130	130	82	48	37			
23			82	327	104	130	82	48	37			
24			82	653	104	160	82	48	37			
25			82	820	104	160	63	63	37			
26			82	382	104	160	63	63	37			
27			104	327	104	160	63	63	37			
28			104	277	104	160	63	63	37			
29			160	277	130	160	63	63	37			
30			160	194	.....	160	63	48	37			
31			233	160	.....	160	.....	37	.....			
1908–9.												
1		28	28	82	845	845	845	210	88	28	4	2
2		28	28	82	845	845	695	175	90	27	4	2
3		28	28	82	1,860	845	695	175	92	25	4	2
4		28	28	82	3,620	845	695	175	94	24	4	2
5		28	48	82	2,310	845	560	144	96	23	4	3
6		28	160	82	1,860	925	560	116	80	23	4	3
7		28	160	194	2,150	1,200	560	116	70	23	4	3
8		28	160	194	3,620	1,200	560	116	66	23	4	3
9		28	160	1,800	1,860	925	435	116	63	19	4	2
10		28	233	577	1,200	925	435	116	61	18	4	2
11		28	194	382	3,420	925	330	116	59	18	4	2
12		28	194	382	10,100	845	330	116	58	18	3	2
13		28	194	7,900	6,600	845	330	92	56	15	2	1
14		28	63	9,690	1,010	845	285	92	54	15	3	1
15		28	63	8,960	1,010	695	285	92	52	15	2	1
16		28	63	2,440	2,150	695	285	92	50	12	2	1
17		28	63	820	1,860	695	285	92	48	12	2	1
18		28	82	820	925	695	285	92	47	12	2	1
19		28	63	820	845	695	245	92	46	10	2	1
20		28	63	1,370	845	695	245	92	44	8	2	1
21		28	63	33,000	1,010	695	245	92	42	8	2	1
22		28	63	3,830	1,010	695	245	102	40	8	2	2
23		28	63	2,480	925	695	245	93	37	6	2	2
24		28	63	2,150	925	695	245	90	36	6	2	3
25		28	63	3,030	1,010	695	245	89	35	6	2	4
26		28	63	4,480	925	695	245	89	34	6	3	5
27		28	63	2,480	925	695	210	88	31	6	3	5
28		28	63	2,480	945	695	210	87	30	6	3	4
29		28	63	2,480	.....	695	210	86	28	5	2	4
30		28	63	1,010	.....	1,010	210	85	28	5	2	4
31		.....	63	1,010	.....	845	.....	86	.....	5	2	.....

Daily discharge, in second-feet, of Calaveras River at Jenny Lind, Cal., for 1907–1912— Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
1909–10.										
1	6	35	175	4,490	330	214	355	146	51	17
2	6	35	1,730	1,230	284	214	330	134	50	15
3	6	35	1,010	1,040	246	214	307	134	49	15
4	10	36	925	625	246	214	284	122	48	15
5	10	36	1,730	380	246	214	284	122	46	14
6	10	36	1,010	214	246	214	265	122	45	14
7	8	37	1,400	185	330	185	265	110	44	14
8	8	52	1,200	185	330	185	246	110	43	14
9	8	64	11,200	185	330	185	230	110	42	14
10	6	72	1,400	185	380	159	230	98	40	14
11	6	1,610	1,010	185	330	159	246	98	39	14
12	6	1,010	1,010	159	284	246	230	110	38	14
13	6	330	925	159	246	230	214	98	37	14
14	5	170	925	284	246	246	200	98	36	14
15	5	160	925	700	246	246	185	87	34	12
16	8	160	330	2,690	246	246	185	87	33	10
17	8	150	285	700	246	230	172	87	32	9
18	6	140	285	700	246	246	172	87	31	7
19	7	130	330	700	246	284	172	78	30	5
20	10	130	144	625	246	462	159	78	28	4
21	12	120	144	493	246	1,550	159	78	27	4
22	18	120	144	493	246	3,230	159	78	26	4
23	19	110	144	493	284	4,980	146	78	25	4
24	17	100	144	2,530	284	1,550	134	68	24	3
25	16	175	144	1,040	284	1,040	122	68	23	3
26	17	245	116	1,230	214	780	122	68	21	3
27	20	175	116	860	214	625	122	60	21	2
28	29	175	116	780	214	432	159	60	19	2
29	40	175	116	493	.....	380	159	60	17	2
30	35	175	116	330	.....	380	146	60	17	2
31	35	.....	175	284	.....	355	.....	51	.....	2

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	23	23	51	51	7,930	1,130	470	305	142	64	21	10
2	23	23	51	51	2,860	2,020	470	305	142	64	17	10
3	23	23	51	51	2,170	1,240	470	258	142	64	17	10
4	.....	23	68	51	1,870	6,640	470	258	112	64	17	10
5	.....	23	68	51	1,870	5,210	665	258	112	64	17	10
6	.....	23	68	51	1,600	3,250	1,980	305	112	46	13	10
7	.....	23	68	51	1,130	31,200	1,450	258	112	46	13	10
8	.....	29	68	51	935	22,500	665	258	112	46	13	10
9	.....	29	51	51	750	8,360	665	258	112	46	13	10
10	.....	35	51	110	665	5,040	1,330	258	112	39	13	10
11	.....	35	51	246	1,730	2,800	1,020	258	112	39	13	10
12	.....	43	134	4,040	1,470	1,980	665	215	86	39	13	10
13	.....	43	87	10,000	2,500	1,450	595	215	86	39	13	10
14	.....	43	68	4,040	2,680	1,220	470	215	86	39	13	10
15	.....	51	51	3,040	1,730	1,120	470	176	86	39	10	10
16	.....	43	51	557	1,130	830	470	176	86	39	10	10
17	.....	43	51	246	935	745	470	176	86	39	10	13
18	.....	51	51	214	840	745	470	176	86	32	10	13
19	.....	51	51	1,670	665	745	470	176	86	32	10	13
20	.....	60	51	3,230	585	745	411	176	64	32	10	13
21	.....	60	51	3,230	510	745	411	176	64	32	10	21
22	.....	60	51	1,670	510	665	411	142	64	26	10	21
23	.....	51	51	700	510	595	411	142	64	26	10	21
24	.....	51	51	6,630	510	595	356	142	64	21	10	26
25	.....	60	51	10,000	440	595	356	142	64	21	10	32
26	.....	87	51	3,040	370	530	356	142	64	21	10	32
27	.....	78	51	2,690	440	530	356	142	64	21	10	32
28	.....	78	51	1,550	510	470	356	142	64	21	10	32
29	.....	51	51	1,930	.....	470	356	142	64	21	10	32
30	.....	51	51	34,100	.....	470	305	142	64	21	10	32
31	.....	.....	51	69,600	.....	470	.....	142	.....	21	10	.....

Daily discharge, in second-feet, of Calaveras River at Jenny Lind, Cal., for 1907–1912— Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	32	46	64	112	215	64	130	161	130
2	32	46	64	142	176	64	130	161	130
3	32	46	64	142	142	64	130	130	102
4	32	46	64	142	142	64	130	130	102
5	32	46	64	142	112	64	130	130	102
6	32	46	64	142	112	215	102	130	102
7	32	46	64	142	112	745	102	130	102
8	32	46	64	142	112	356	102	130	102
9	32	46	64	142	112	258	102	130	78
10	32	64	64	142	112	215	130	130	78
11	32	64	64	142	86	176	365	130	78
12	32	64	64	176	86	142	319	130	78
13	32	64	64	176	64	1,120	161	130	78
14	32	64	64	176	64	470	130	102	57
15	39	64	64	142	64	415	130	102	57
16	39	64	64	142	64	745	130	102	57
17	39	64	86	142	64	319	130	102	57
18	39	64	86	142	64	233	130	78	57
19	39	64	86	142	64	195	130	78	57
20	46	64	86	142	64	161	130	78	57
21	46	64	86	142	64	161	130	78	40
22	46	64	86	142	64	161	130	78	40
23	46	64	86	142	64	130	130	78	40
24	46	64	86	142	64	130	130	78	40
25	46	64	86	142	64	130	130	78	40
26	46	64	86	142	64	130	130	195	40
27	46	64	86	830	64	130	130	233	27
28	46	64	86	258	64	130	130	161	27
29	46	64	86	215	64	130	130	130	27
30	46	64	112	215	.....	130	161	130	27
31	46	.....	112	215	.....	130	.....	130	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: Jan. 1, 1907, to Jan. 20, 1909, well defined between 30 and 12,000 second-feet; Jan. 21, 1909, to Dec. 31, 1909, well defined below 12,000 second-feet; Jan. 1, 1910, to Jan. 31, 1911, well defined at low stages; Feb. 1, 1911, to Mar. 6, 1911, well defined at low stages; Mar. 7, 1911, to Mar. 13, 1912, well defined at low stages; Mar. 14, 1912, to June 30, 1912, fairly well defined. No record July 1 to Nov. 30, 1907. No flow July 15 to some time after Sept. 15, 1908. Discharge May 21 to Nov. 9, and Nov. 14 to 24, 1909, estimated. Discharge June 2 to 24, and July 6 to 13, 1910, estimated. No flow Aug. 1 to about Sept. 30, 1910. Flow in October, 1910, probably uniform.

Monthly discharge of Calaveras River at Jenny Lind, Cal., for 1907–1912.

[Drainage area, 395 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1907.							
January	3,620	653	1,570	3.97	4.58	96,500	B.
February	6,600	653	1,920	4.86	5.06	107,000	B.
March	40,200	910	5,230	13.2	15.22	322,000	B.
April	1,370	382	712	1.80	2.01	42,400	B.
May	382	160	255	.646	.74	15,700	B.
June	194	130	157	.397	.44	9,340	B.
The period	.....	.....	.....	.....	.....	593,000	
1907–8.							
December	233	37	102	.258	.30	6,270	B.
January	1,950	104	343	.868	1.00	21,100	B.
February	2,110	104	265	.671	.72	15,200	B.
March	820	130	214	.542	.62	13,200	B.
April	160	63	102	.258	.29	6,070	B.
May	63	37	51	.129	.15	3,140	B.
June	37	37	37	.095	.10	2,200	C.
The period	.....	.....	.....	.....	.....	67,200	

Monthly discharge of Calaveras River at Jenny Lind, Cal., for 1907–1912—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1908–9.							
November	28	28	28	0.071	0.08	1,670	C.
December	233	28	89.3	.226	.26	5,490	B.
January	33,000	63	3,070	7.77	8.96	189,000	B.
February	10,100	845	3,450	8.71	9.07	192,000	B.
March	1,200	695	811	2.05	2.36	49,900	B.
April	845	210	375	.949	1.06	22,300	B.
May			110	.278	.32	6,760	C.
June			55.2	.140	.16	3,280	C.
July			14.0	.035	.04	861	C.
August			2.9	.0073	.008	178	C.
September			2.3	.0058	.006	137	C.
The period						472,000	
1909–10.							
October			13.0	.033	.04	799	C.
November			200	.506	.56	11,900	C.
December	11,200	116	949	2.40	2.77	58,400	B.
January	4,490	159	795	2.01	2.32	48,900	A.
February	380	214	269	.681	.71	14,900	A.
March	4,980	159	642	1.63	1.88	39,500	A.
April	355	122	205	.519	.58	12,200	A.
May	146	51	91.8	.232	.27	5,640	B.
June	51	17	33.9	.086	.10	2,020	C.
July	17	2	9.0	.023	.03	555	C.
August			.4	.0010	.001	25	D.
September			.0	.0000	000	0	
The year			267	.667	9.26	195,000	
1910–11.							
October			23.0	.058	.07	1,410	D.
November	87	23	44.8	.113	.13	2,670	B.
December	134	51	58.1	.147	.17	3,570	B.
January	69,600	51	5,260	13.3	15.33	323,000	C.
February	7,930	370	1,420	3.59	3.74	78,900	B.
March	31,200	470	3,390	8.58	9.89	208,000	C.
April	1,980	305	594	1.50	1.67	35,300	C.
May	305	142	202	.511	.59	12,400	B.
June	142	64	90.5	.229	.26	5,390	B.
July	64	21	37.5	.095	.11	2,310	C.
August	21	10	12.1	.031	.04	744	C.
September	32	10	16.4	.042	.05	976	C.
The year			925	2.34	32.05	675,000	
1911–12.							
October	46	32	38.5	.098	.11	2,370	C.
November	64	46	58.6	.148	.17	3,490	C.
December	112	64	76.3	.193	.22	4,690	C.
January	830	112	177	.448	.52	10,900	B.
February	215	64	93.3	.236	.25	5,370	C.
March	1,120	64	244	.618	.71	15,000	B.
April	365	102	142	.359	.40	8,450	B.
May	233	78	121	.306	.35	7,440	B.
June	130	27	67.0	.170	.19	3,990	B.
The period						130,000	

CALAVERAS RIVER NEAR BELLOTA, CAL.

The following information regarding records of discharge of Calaveras River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

Discharge measurements and gage heights were obtained at a station several miles above Bellota. Although incomplete for the period, the data thus obtained have afforded a good basis for the estimates of discharge.

Monthly discharge of Calaveras River near Bellota, Cal., for 1878–1884.

[Drainage area, 491 square miles.]

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.				
November [a]	0	0.0	0.0	0
December [a]	0	.0	.0	0
January	229	.47	.54	14,081
February	648	1.32	1.37	35,988
March	1,068	2.18	2.51	65,669
April	680	1.38	1.54	40,463
May	166	.34	.39	9,878
June [a]	98	.20	.22	5,831
July [a]	24	.05	.06	1,476
August [a]	0	.0	.0	0
September [a]	0	.0	.0	0
October [a]	0	.0	.0	0
The year	243	.495	6.63	173,000
1879–80.[a]				
November	0	.0	.0	0
December	295	.60	.69	18,139
January	221	.45	.52	13,589
February	393	.80	.86	22,606
March	614	1.25	1.44	37,753
April	4,174	8.50	9.48	248,370
May	1,473	3 00	3.46	90,571
June	193	.40	.45	11,663
July	24	.05	.06	1,476
August	10	.02	.02	615
September	0	.0	.0	0
October	0	.0	.0	0
The year	616	1.26	16.98	445,000
1880–81.[a]				
November	0	.0	.0	0
December	246	.50	.58	15,126
January	1,473	3.00	3.46	90,571
February	2,700	5.50	5.73	149,950
March	982	2.00	2.31	60,381
April	982	2.00	2.23	58,433
May	196	.40	.46	12,052
June	74	.15	.17	4,403
July	49	.10	.12	3,013
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	558	1.14	15.06	394,000
1881–82.[a]				
November	0	.0	.0	0
December	74	.15	.17	4,550
January	344	.70	.81	21,152
February	442	.90	.94	24,547
March	1,719	3.50	4.04	105,697
April	1,719	3.50	3.90	102,288
May	2,946	6.00	6.92	181,142
June	246	.50	.52	14,638
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	98	.20	.23	6,026
The year	632	1.29	17.53	460,000

[a] Estimated from run-off of neighboring streams.

Monthly discharge of Calaveras River near Bellota, Cal., for 1879–1884—Continued.

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1882–83.[a]				
November	147	0.30	0.33	8,747
December	147	.30	.35	9,039
January	491	1.00	1.15	30 190
February	393	.80	.83	21,826
March	737	1.50	1.73	45,316
April	982	2.00	2.23	58,433
May	491	1.00	1.15	30,190
June	196	.40	.45	11,663
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	74	.15	.17	4,550
The year	305	.621	8.39	220,000
1883–84.[a]				
November	24	.05	.06	1,428
December	49	.10	.12	3,013
January	196	.40	.46	12,052
February	2,455	5.00	5.39	141,213
March	2,946	6.00	6.92	181,142
April	2,455	5.00	5.58	146,083
May	491	1.00	1.15	30,190
June	491	1.00	1.12	29,217
July	196	.40	.46	12,052
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	775	1.58	21.26	556,000

[a] Estimated from run-off of neighboring streams.

MOKELUMNE RIVER AT ELECTRA, CAL.

A gaging station was maintained at this point January 1 to June 30, 1901, and May 11, 1903, to December 31, 1904. It is located 3 miles above the wagon bridge on the Mokelumne Hill and Jackson road. It is half a mile below the Standard Electric Co.'s power house and the post office at Electra, Cal.

The gage was a large inclined timber bolted to a tree on the left bank.

Discharge measurements were made by means of a cable and car 200 feet below the gage.

The current is swift at all stages, but there are cross currents at extreme low water. Both banks are high and are not liable to overflow. The lower part of the right bank is composed of hard gravel. The upper part of the right bank and the entire left bank are composed of solid rock. The bed of the stream is composed of rock and gravel and is fairly permanent.

Results at this station are fair.

Discharge measurements of Mokelumne River at Electra, Cal., in 1901–1904.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1901.		*Feet.*	*Sec.-feet.*	1903.		*Feet.*	*Sec.-feet.*
Jan. 8	Burr Bassell	6.00	1,717	May 11	S. G. Bennett	8.10	4,767
Feb. 4	do	4.20	608	June 18	do	6.45	2,039
15	do	4.80	966				
19	do	11.00	13,213	1904.			
22	do	8.60	6,330	Jan. 8	S. G. Bennett	4.25	176
26	do	7.40	3,846	Feb. 24	W. B. Newhall	12.0	17,300
Mar. 4	do	6.60	2,723	24	do	12.7	19,000
May 3	do	6.20	2,232	26	do	8.65	4,663
24	do	6.70	3,016	27	do	8.95	5,742
				28	do	8.30	4,029
1902.				June 10	O. W. Peterson	8.15	4,460
Aug. 14	E. T. Perkins		81	July 19	do	4.75	500
				Aug. 16	Clapp and Peterson	4.15	96

Daily gage height, in feet, of Mokelumne River at Electra, Cal., for 1901 and 1903–4.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.
1	3.80	4.40	7.50	4.90	6.30	8.40	16	4.70	4.90	5.60	6.20	9.30	7.60
2	3.70	4.30	7.40	5.10	6.00	8.60	17	4.40	8.40	5.80	5.90	10.00	7.50
3	3.60	4.30	7.50	5.50	6.20	8.50	18	4.80	7.90	5.70	6.30	9.30	7.70
4	3.70	4.20	6.60	5.30	6.50	8.70	19	4.70	11.00	5.80	6.70	7.90	7.30
5	4.80	6.00	6.70	5.10	6.80	8.80	20	4.70	10.00	5.70	6.80	7.50	6.90
6	5.00	5.00	6.70	5.20	6.90	8.50	21	4.80	9.10	5.60	6.90	6.70	7.00
7	7.80	4.80	6.60	5.00	7.10	8.40	22	4.80	8.60	5.80	6.90	6.80	7.20
8	6.00	4.50	6.30	5.00	7.00	8.30	23	4.80	9.00	5.70	6.70	7.50	6.90
9	5.80	4.20	6.10	4.90	7.20	7.60	24	4.50	8.90	5.50	6.80	7.00	6.50
10	4.80	4.60	6.00	4.80	7.60	7.00	25	4.80	8.30	5.40	6.70	6.60	5.90
11	4.70	4.20	6.00	4.90	9.50	6.70	26	4.50	7.40	5.40	6.80	6.50	5.50
12	5.30	4.40	6.30	5.20	9.60	6.60	27	4.40	7.40	5.30	6.80	6.10	5.40
13	4.80	4.30	5.80	5.50	9.60	6.40	28	4.60	7.30	5.40	6.80	6.20	5.80
14	5.00	4.20	5.70	5.90	9.70	6.30	29	4.40	.....	5.30	6.90	6.30	7.00
15	4.60	4.80	5.60	6.10	9.20	6.80	30	4.40	.....	5.20	6.60	8.20	6.80
							31	4.30	.....	5.10	.....	8.00	.....

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.						1903.					
1	.....	8.4	5.3	4.2	4.3	16	.....	5.6	4.4	4.1	4.4
2	.....	8.7	5.2	4.1	4.3	17	5.6	5.7	4.4	4.2	4.3
3	.....	8.5	4.7	4.2	4.3	18	5.6	6.3	4.4	4.3	4.3
4	.....	8.1	4.9	4.3	4.4	19	4.8	6.8	4.2	4.2	4.4
5	.....	7.5	4.7	4.3	4.3	20	5.1	6.6	4.3	4.2	4.4
6	.....	8.0	4.6	4.3	4.2	21	4.2	6.5	4.3	4.3	4.4
7	.....	7.9	4.7	4.2	4.3	22	4.5	6.5	4.3	4.3	4.3
8	.....	8.0	4.8	4.2	4.4	23	3.9	6.1	4.3	4.2	4.3
9	.....	7.6	4.7	4.3	4.4	24	3.9	6.1	4.2	4.2	4.3
10	.....	7.2	4.7	4.2	4.3	25	4.5	6.3	4.3	4.3	4.4
11	8.2	4.7	4.5	4.2	4.3	26	4.9	6.1	4.2	4.3	4.3
12	.....	6.8	4.4	4.2	4.4	27	6.1	6.1	4.2	4.3	4.4
13	.....	7.0	4.6	4.2	4.3	28	7.5	5.8	4.4	4.3	4.3
14	.....	7.1	4.6	4.2	4.3	29	7.8	5.5	4.2	4.3	4.4
15	.....	7.0	4.7	4.3	4.3	30	8.5	5.3	4.2	4.4	4.4
						31	9.8	.....	4.3	4.4	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903–4.												
1	4.3	4.3	4.8	4.35	3.90	7.00	7.70	7.05	7.90	6.25	4.25	4.25
2	4.3	4.3	4.6	4.30	3.90	7.10	7.55	7.00	8.00	6.00	4.20	4.30
3	4.2	4.4	4.6	4.45	4.00	7.45	7.20	7.05	8.75	5.95	4.35	4.30
4	4.3	4.3	4.4	4.55	3.90	7.35	7.00	7.45	8.60	5.70	4.30	4.15
5	4.4	4.3	4.4	4.20	4.90	8.00	7.30	7.95	8.70	5.50	4.40	4.20
6	4.3	4.3	4.3	4.10	4.85	6.80	7.25	7.95	8.80	5.60	4.55	4.15
7	4.3	4.3	4.3	4.15	5.00	7.25	7.50	8.70	8.85	5.90	4.20	4.05
8	4.3	4.4	4.2	4.20	4.45	8.85	7.40	8.70	7.80	5.70	4.30	4.15
9	4.3	4.5	4.2	4.10	4.40	7.30	7.90	9.10	7.90	5.50	4.25	4.15
10	4.3	4.4	4.2	4.20	4.45	8.85	8.05	9.50	7.95	5.60	4.35	4.15

Daily gage height, in feet, of Mokelumne River at Electra, Cal., for 1901 and 1903–4—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903–4.												
11	4.3	4.5	4.3	4.20	4.35	7.80	8.50	9.70	7.90	5.25	4.30	4.20
12	4.3	4.7	4.3	4.20	6.55	7.25	8.30	9.90	7.95	5.10	4.35	4.15
13	4.2	8.4	4.2	4.15	6.25	7.05	9.00	9.90	8.00	5.10	3.95	4.05
14	4.3	6.7	4.1	4.15	4.55	6.90	9.20	9.40	8.05	4.95	3.95	4.20
15	4.2	5.8	4.1	4.15	4.45	7.05	9.35	9.40	7.90	4.85	3.95	4.10
16	4.1	5.4	4.1	4.20	8.45	6.95	8.00	9.15	7.75	4.75	4.10	4.25
17	4.2	4.7	4.1	4.15	6.75	7.55	7.60	9.15	7.60	4.50	3.95	4.25
18	4.2	4.5	4.3	4.20	5.95	8.85	7.80	9.20	7.55	4.35	4.00	4.20
19	4.2	4.5	4.3	4.10	5.70	9.95	8.60	8.30	7.20	4.50	4.10	4.20
20	4.3	5.9	4.2	4.70	5.50	10.50	7.80	8.20	8.30	4.60	4.00	4.05
21	4.3	6.2	4.3	4.50	5.90	9.10	7.40	8.75	7.50	4.65	4.05	4.15
22	4.3	5.7	4.2	4.45	6.50	8.25	7.55	9.50	7.20	5.00	4.15	4.15
23	4.3	5.5	4.2	4.35	9.80	8.20	7.05	9.60	7.00	4.60	4.10	4.35
24	4.2	5.7	4.3	4.30	9.55	7.95	6.90	9.50	6.85	4.50	4.10	4.55
25	4.2	5.7	4.1	4.25	11.45	7.55	7.30	9.40	6.50	4.60	4.15	4.70
26	4.3	5.4	4.1	4.20	9.45	7.35	7.75	7.85	6.50	4.45	4.05	5.20
27	4.3	5.1	4.2	4.25	9.80	7.35	7.15	7.85	6.45	4.40	4.15	4.60
28	4.2	4.9	4.2	4.20	8.00	8.35	7.00	8.25	6.20	4.40	4.10	4.25
29	4.3	4.9	4.1	4.25	7.60	9.90	6.95	8.40	6.30	4.20	4.05	4.10
30	4.3	4.7	4.2	4.20	.....	8.60	7.05	8.45	6.30	4.05	4.30	4.15
31	4.3	.....	4.5	4.15	.....	7.95	.....	8.25	.....	4.30	4.15	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1904.				1904.				1904.			
1	4.25	4.50	4.60	11	8.85	4.20	4.35	21	4.35	4.25	4.35
1	4.55	4.55	4.50	12	6.75	4.20	4.25	22	4.25	4.25	4.35
3	4.45	4.50	4.45	13	6.05	4.20	4.15	23	4.55	4.30	4.40
4	4.35	4.40	4.40	14	5.70	4.20	4.20	24	5.05	4.30	4.50
5	4.30	4.20	4.25	15	5.30	4.20	4.30	25	4.75	4.40	4.70
6	4.25	4.15	4.25	16	5.15	4.10	4.35	26	4.95	4.40	4.45
7	5.40	4.10	4.35	17	5.10	4.30	4.35	27	4.75	4.50	4.55
8	5.65	4.15	4.30	18	4.95	4.15	4.25	28	4.60	4.85	4.60
9	5.55	4.10	4.45	19	4.80	4.35	4.25	29	4.60	4.45	4.55
10	5.65	4.25	4.40	20	4.50	4.20	4.35	30	4.60	4.45	5.30
								31	4.55	.....	6.35

Rating tables for Mokelumne River at Electra, Cal.

Jan. 1 to June 30, 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
3.60	330	5.60	1,520	7.60	4,200	9.60	8,830
3.80	410	5.80	1,720	7.80	4,600	9.80	9,390
4.00	510	6.00	1,960	8.00	5,000	10.00	9,980
4.20	610	6.20	2,220	8.20	5,420	10.20	10,590
4.40	710	6.40	2,480	8.40	5,860	10.40	11,220
4.60	830	6.60	2,740	8.60	6,320	10.60	11,870
4.80	950	6.80	3,020	8.80	6,790	10.80	13,530
5.00	1,070	7.00	3,300	9.00	7,270	11.00	13,210
5.20	1,200	7.20	3,580	9.20	7,770		
5.40	1,350	7.40	3,860	9.40	8,290		

Jan. 1 to Dec. 31, 1903.

4.1	90	5.1	780	6.2	1,800	8.2	4,480
4.2	140	5.2	860	6.4	2,000	8.4	4,820
4.3	200	5.3	940	6.6	2,240	8.6	5,160
4.4	260	5.4	1,020	6.8	2,480	8.8	5,500
4.5	330	5.5	1,100	7.0	2,730	9.0	5,870
4.6	400	5.6	1,200	7.2	2,990	9.2	6,280
4.7	470	5.7	1,300	7.4	3,260	9.4	6,700
4.8	540	5.8	1,400	7.6	3,550	9.6	7,140
4.9	620	5.9	1,500	7.8	3,850	9.8	7,610
5.0	700	6.0	1,600	8.0	4,160	10.00	8,100

Rating tables for Mokelumne River at Electra, Cal.—Continued.

Jan. 1 to Dec. 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
4.00	25	5.30	940	6.60	2,230	8.80	5,540
4.10	70	5.40	1,020	6.70	2,360	9.00	5,900
4.20	120	5.50	1,100	6.80	2,490	9.20	6,300
4.30	180	5.60	1,200	6.90	2,620	9.40	6,700
4.40	240	5.70	1,300	7.00	2,750	9.60	7,140
4.50	310	5.80	1,400	7.20	3,010	9.80	7,620
4.60	380	5.90	1,500	7.40	3,270	10.00	8,100
4.70	460	6.00	1,600	7.60	3,550	11.00	11,200
4.80	540	6.10	1,700	7.80	3,850	12.00	15,600
4.90	620	6.20	1,800	8.00	4,150	13.00	22,200
5.00	700	6.30	1,900	8.20	4,490		
5.10	780	6.40	2,000	8.40	4,830		
5.20	860	6.50	2,100	8.60	5,180		

Monthly discharge of Mokelumne River at Electra, Cal., for 1901 and 1903–4.

[Drainage area, 537 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1901.						
January	4,600	330	1,000	1.86	2.14	61,488
February	13,210	610	3,302	6.15	6.42	183,384
March	4,020	1,130	2,004	3.73	4.30	123,221
April	3,160	950	2,040	3.80	4.24	121,388
May	9,980	1,960	4,627	8.62	9.93	284,503
June	6,790	1,350	3,833	7.14	7.97	228,145
July	.....	.....	260	.49	.56	15,987
August	.....	.....	190	.36	.42	11,683
September	.....	.....	60	.11	.12	3,570
The period	.....	.....	.....	.....	.....	1,030,000
1901.						
October	.....	.....	76	.14	.16	4,673
November	.....	.....	210	.39	.44	12,496
December[a]	.....	.....	1,467	2.73	3.15	45,467
1903.						
June	5,330	470	2,616	4.87	5.43	155,663
July	940	140	344	.64	.74	21,152
August	260	90	170	.32	.37	10,453
September	260	140	222	.41	.46	13,210
1903–4.						
October	260	90	181	.34	.39	11,129
November	4,820	200	855	1.59	1.77	50,876
December	540	90	188	.35	.40	11,560
January	460	95	157	.29	.33	9,654
February	13,000	5	2,491	4.64	5.00	143,284
March	9,500	2,490	4,170	7.77	8.96	256,403
April	6,600	2,620	3,780	7.04	7.85	224,926
May	7,860	2,750	5,411	10.08	11.62	332,709
June	5,450	1,800	3,607	6.72	7.50	214,631
July	1,850	42	722	1.34	1.54	44,394
August	345	15	111	.21	.24	6,825
September	860	42	165	.31	.35	9,818
The year	13,000	5	1,820	3.39	45.95	1,320,000
1904.						
October	5,630	150	827	1.54	1.78	50,850
November	580	70	189	.35	.39	11,246
December	1,950	95	315	.59	.68	19,369

[a] Values July to December, 1901, are only approximate.

MOKELUMNE RIVER AT LONE STAR MILL, CAL.

The following information regarding records of discharge of Mokelumne River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

The channel of this stream has been repeatedly examined and its discharge measured at a station near the Lone Star mill[a] (base of foothills), just north of Clements.

Daily gage heights have been obtained at this station and at the Westmoreland bridge, 12 miles above, for a large part of the period from 1878 to 1881, and occasionally for the remaining time. These data form the basis of what is believed to be a good practical estimate of the discharge into the valley each month.

Westmoreland bridge is 1 mile above Lancha Plana, in the SW. $\frac{1}{4}$ sec. 4, T. 4 N., R. 10 E. M. D. B. & M., below all important tributaries except Dry Creek and Cosumnes River.

Monthly discharge of Mokelumne River at Lone Star mill, Cal., for 1878–1884.

[Drainage area, 657 square miles].

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.						
November[b]			33	0.05	0.06	1,964
December[b]			33	.05	.06	2,029
January[b]	2,107		328	.50	.58	20,168
February	7,575	134	1,198	1.82	1.89	66,534
March	3,420	676	1,369	2.08	2.40	84,177
April	5,072	1,579	3,065	4.67	5.21	182,380
May	6,170	1,348	3,247	4.94	5.69	199,650
June	5,610	1,579	3,629	5.52	6.16	215,941
July	1,117	288	538	.82	.95	33,080
August[b]			164	.25	.29	10,084
September[b]			26	.04	.04	1,547
October[b]			19	.03	.03	1,168
The year			1,140	1.73	23.36	819,000
1879–80.						
November[b]			59	.09	.10	3,511
December	624	224	465	.71	.82	28,592
January	288	256	279	.42	.48	17,155
February	520	288	396	.60	.65	22,778
March	728	520	644	.98	1.13	39,598
April	9,642	728	4,553	6.93	7.73	270,922
May	8,071	3,048	5,031	7.66	8.83	309,344
June	7,326	4,685	6,054	9.21	10.27	360,238
July	5,201	572	2,745	4.18	4.82	168,783
August	480	134	365	.55	.63	22,443
September	134		29	.04	.04	1,726
October			164	.25	.29	10,084
The year			1,730	2.64	35.79	1,260,000

[a] Also known as Magee's mill.
[b] Estimated from run-off of neighboring streams and from previous measurements.

Monthly discharge of Mokelumne River at Lone Star mill, Cal., for 1878–1884—Contd.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1880–81.						
November [a]			98	0.15	0.17	5,831
December	998		291	.44	.51	17,893
January	8,536	192	1,037	1.58	1.82	63,763
February	8,852	624	3,049	4.64	4.83	169,333
March	2,701	728	1,126	1.71	1.97	69,235
April	4,556	1,810	3,195	4.86	5.42	190,116
May	4,298	1,579	3,034	4.62	5.32	186,553
June	2,701	572	1,237	1.88	2.10	73,607
July	520		159	.24	.28	9,777
August [a]			98	.15	.17	6,026
September [a]			98	.15	.17	5,831
October [a]			66	.10	.12	4,058
The year			1,120	1.71	22.88	802.000
1881–82.[a]						
November			207	.32	.36	12,317
December			624	.95	1.10	38,368
January			591	.90	1.04	36,339
February			624	.95	.99	34,655
March			1,971	3.00	3.46	121,192
April			2,628	4.00	4.46	156,377
May			4,927	7.50	8.65	302,949
June			3,285	5.00	5.58	195,471
July			788	1.20	1.38	48,452
August			66	.10	.12	4,058
September			59	.09	.10	3,511
October			230	.35	.40	14,142
The year			1,330	2.03	27.64	968,000
1882–83.[a]						
November			207	.31	.35	12,317
December			207	.31	.36	12,728
January			414	.63	.73	25,456
February			328	.50	.52	18,216
March			591	.90	1.04	36,339
April			1,971	3.00	3.35	117,283
May			3,942	6.00	6.92	242,384
June			2,628	4.00	4.46	156,377
July			657	1.00	1.15	40,397
August			263	.40	.46	16,171
September			98	.15	.17	5,831
October			98	.15	.17	6,026
The year			950	1.45	19.68	690,000
1883–84.[a]						
November			132	.20	.22	7,855
December			132	.20	.23	8,116
January			164	.25	.29	10,084
February			1,971	3.00	3.24	113,373
March			3,942	6.00	6.92	242,384
April			3,942	6.00	6.69	234,565
May			3,285	5.00	5.76	201,987
June			2,957	4.50	5.02	175,954
July			2,628	4.00	4.61	161,589
August			657	1.00	1.15	40,397
September			131	.20	.22	7,795
October			98	.15	.17	6,026
The year			1,670	2.54	34.52	1,210,000

[a] Estimated from run-off of neighboring streams and from previous measurements.

MOKELUMNE RIVER NEAR CLEMENTS, CAL.

This station, which is located at the highway bridge about 1 mile north of Clements, in the NW. ¼ sec. 15, T. 4 N., R. 8 E., was established October 28, 1904.

No important tributaries enter for many miles above or below the station. The three forks unite about 30 miles above Clements, and Cosumnes River enters from the north about 19½ miles (air line) below Clements.

Several ditches take water for use in mining and in power development in the Mokelumne basin, but most of the water is returned to the river. No water is diverted immediately above the station, except for local irrigation on the bottom lands adjacent to the river. In the upper part of the basin some water is probably diverted into contiguous basins. The acquired water rights on the lower part of the stream probably take the larger part, if not all, of the minimum flow.

The low-water section of the gage is an inclined staff on the right bank; the upper portion is painted on the middle pier of the bridge. No change has ever been made in the gage datum.

Discharge measurements are made from the bridge.

The channel, which is composed of sand and gravel, is subject to slight changes during high water.

Records at this station are fairly good.

Discharge measurements of Mokelumne River near Clements, Cal., in 1904–1912.

Date.	Hydrographer.	Gage height.	Discharge.
1904.		*Feet.*	*Sec.-feet.*
Aug. 17	Peterson and Clapp.	.....	109
Oct. 27	O. W. Peterson	4.30	334
Nov. 4	do	4.10	280
1905.			
Jan. 23	F. R. S. Buttemer	5.15	788
24	do	4.85	620
24	do	4.79	596
30	do	4.28	384
Feb. 9	do	4.87	620
15	do	4.31	438
20	do	6.14	1,425
May 18	W. B. Clapp	9.00	3,788
June 29	O. W. Peterson	4.64	559
July 28	Peterson and Lee	3.14	125
Sept. 5	C. H. Lee	3.13	100
Nov. 29	do	2.90	57
1906.			
Feb. 11	F. R. S. Buttemer	4.60	492
27	do	6.50	1,460
Mar. 12	do	9.15	3,790
19	do	6.48	1,500
Apr. 14	W. C. Sawyer	8.28	2,630
20	do	9.40	3,780
21	do	10.00	4,340
28	do	8.40	2,750
May 9	do	11.55	5,730
19	do	12.18	6,450
22	do	10.02	3,720
23	do	9.50	3,170
June 12	do	14.35	8,610
13	do	14.29	8,730
19	do	12.20	6,440
20	do	13.68	7,680
27	do	9.80	3,780
28	do	9.60	3,480
July 7	do	10.75	4,740
17	do	8.69	2,760
18	do	8.46	2,720
28	do	6.52	1,340
30	do	5.65	826
Aug. 7	Sawyer and Martin	4.52	400
Sept. 3	W. F. Martin	4.05	221
Nov. 24	do	3.77	163
27	R. S. Hawley	3.75	161
1907.			
Feb. 6	R. S. Hawley	9.40	3,760
19	do	6.87	1,680
Mar. 6	do	7.24	2,140
13	do	7.53	2,380
Oct. 2	W. A. Lamb	4.43	280
Nov. 6	do	4.32	278
1908.			
Apr. 16	W. A. Lamb	6.95	1,860
28	do	8.55	3,400
Sept. 16	W. V. Hardy	3.74	143
Oct. 8	do	3.56	122
Dec. 12	W. F. Martin	3.95	210
1909.			
Feb. 14	W. F. Martin	8.30	2,950
May 19	do	8.68	3,280
July 23	W. V. Hardy	4.80	287
Sept. 1	do	3.57	51
Nov. 7	do	4.31	191
23	do	8.10	2,450
1910.			
Jan. 19	J. E. Stewart	5.83	1,030
Mar. 13	do	7.45	2,230
28	do	7.24	2,050
May 20	do	8.26	3,020
June 24	do	4.62	408
July 14	do	3.81	153
Aug. 4	W. V. Hardy	3.25	60
Oct. 21	J. E. Stewart	3.60	127
1911.			
Jan. 15	J. E. Stewart	7.56	2,290
Feb. 22	do	5.65	1,030
Mar. 7	do	13.00	9,120
May 17	do	7.90	2,730
July 29	do	4.54	476
Sept. 20	do	3.84	245
1912.			
Apr. 9	J. E. Stewart	4.90	708
May 13	do	8.38	3,300
25	do	7.26	2,180
July 9	do	3.66	176

Daily gage height, in feet, of Mokelumne River near Clements, Cal., for 1904–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904–05.												
1	.....	4.40	4.15	5.0	4.85	5.4	6.05	7.5	7.65	4.3	3.2	3.3
2	.....	4.25	4.75	4.55	7.55	5.45	6.2	7.0	7.45	4.3	3.3	3.3
3	.....	4.50	4.15	4.5	5.8	5.5	6.3	6.9	7.15	4.1	3.3	3.25
4	.....	4.20	4.05	4.4	5.35	5.65	6.45	6.65	6.9	4.0	3.3	3.3
5	.....	4.10	3.95	4.15	6.55	5.6	6.7	6.5	6.6	3.85	3.2	3.3
6	.....	4.10	4.00	4.3	5.7	5.7	6.8	6.4	6.8	3.85	3.25	3.3
7	.....	4.15	3.90	4.1	5.3	5.5	6.95	6.6	7.1	3.8	3.15	3.3
8	.....	4.20	3.80	4.1	5.0	5.6	7.05	6.9	7.05	4.05	3.3	3.35
9	.....	3.95	4.00	4.3	4.9	5.45	6.85	6.55	7.0	3.65	3.25	3.3
10	.....	3.95	4.10	4.3	4.65	5.45	7.0	6.4	7.15	3.6	3.3	3.3
11	.....	3.85	3.90	4.1	4.65	5.5	6.6	6.3	7.55	3.7	3.2	3.2
12	.....	3.90	3.85	4.1	4.55	5.45	6.25	6.3	7.75	3.6	3.3	3.3
13	.....	3.80	3.90	4.15	4.5	6.1	6.25	6.25	7.75	3.65	3.2	3.3
14	.....	3.85	3.85	4.15	4.55	6.15	6.45	6.2	7.1	3.45	2.9	3.35
15	.....	3.95	3.80	4.2	4.35	5.55	6.6	7.4	6.95	3.45	3.35	3.35
16	.....	4.00	3.85	4.7	4.4	5.6	6.75	8.25	6.85	3.35	3.3	3.3
17	.....	4.05	3.90	4.3	4.95	6.2	6.35	10.55	6.65	3.3	3.3	3.3
18	.....	3.95	3.90	4.25	4.9	6.55	6.9	9.0	6.5	3.3	3.35	3.35
19	.....	4.05	3.90	4.35	4.85	7.05	6.8	8.85	6.25	3.3	3.4	3.35
20	.....	4.00	3.80	4.4	5.8	7.3	6.35	8.8	6.15	3.3	3.25	3.35
21	.....	3.90	3.90	4.45	5.5	6.85	6.05	8.85	6.0	3.3	3.25	3.35
22	.....	3.95	3.90	4.45	5.25	6.65	6.05	8.25	5.75	3.3	3.25	3.4
23	.....	3.95	3.90	5.0	5.15	6.3	6.25	7.9	5.45	3.3	3.25	3.35
24	.....	3.85	4.00	4.85	5.1	6.55	6.7	8.65	5.35	3.3	3.25	3.4
25	.....	3.80	4.70	4.6	5.25	6.5	7.25	8.6	4.9	3.3	3.3	3.3
26	.....	3.85	4.20	4.55	5.45	6.3	7.6	8.95	5.1	3.25	3.35	3.35
27	.....	3.95	4.00	4.45	5.55	6.9	8.3	7.35	4.9	3.2	3.35	3.35
28	4.30	3.95	4.10	4.2	5.35	6.45	8.3	7.1	4.75	3.2	3.3	3.35
29	4.35	4.40	3.90	4.25	.....	6.85	8.4	7.45	4.65	3.15	3.25	3.35
30	4.25	4.20	4.10	4.3	.....	6.4	8.15	7.45	4.4	3.15	3.3	3.45
31	4.60	.....	6.65	4.35	.....	6.2	.....	7.6	.....	3.2	3.35	.....
1905–6.												
1	3.4	3.25	3.25	3.05	4.5	6.05	11.2	8.45	9.45	10.95	5.15	3.8
2	3.25	3.2	3.1	3.1	4.4	5.6	9.95	9.05	9.9	12.25	5.0	3.9
3	3.3	3.25	3.1	3.1	4.45	5.85	8.75	10.5	10.45	12.15	5.2	3.8
4	3.25	3.1	3.0	3.15	4.4	6.45	8.3	10.85	12.2	13.2	5.1	3.75
5	3.3	3.1	2.95	3.15	4.45	5.75	7.95	11.6	12.15	12.4	4.95	3.75
6	3.3	3.1	2.95	3.15	4.5	5.7	7.9	12.45	10.45	12.2	4.7	3.85
7	3.45	3.1	3.1	3.15	4.5	5.75	7.75	12.5	9.6	11.35	5.15	4.0
8	3.4	2.95	3.1	3.1	4.45	5.75	7.6	12.1	10.05	11.45	4.6	3.9
9	3.25	3.0	3.05	3.1	4.5	5.95	7.75	12.4	11.6	11.15	4.8	4.05
10	3.35	2.95	3.05	3.1	4.65	6.05	8.3	12.1	13.8	10.7	4.6	4.2
11	3.3	2.95	3.0	3.15	4.7	6.05	8.5	12.2	14.3	10.4	4.9	4.4
12	3.35	2.95	3.1	3.3	4.55	8.4	8.0	11.15	14.4	10.05	5.0	.....
13	3.35	2.9	3.05	5.6	4.5	8.1	7.8	10.2	13.8	10.05	4.55	3.9
14	3.15	2.95	3.1	7.95	4.6	7.5	7.9	10.4	12.2	10.1	4.4	3.95
15	3.15	2.85	3.05	6.05	5.05	11.5	8.3	10.9	11.7	9.65	4.4	4.0
16	3.25	2.85	3.05	6.6	5.75	8.15	8.6	9.55	13.3	9.4	4.15	3.95
17	3.25	2.8	3.1	7.75	5.15	7.4	8.6	9.15	12.9	8.9	3.9	4.05
18	3.05	2.8	3.15	11.45	5.45	6.8	8.75	10.15	11.95	8.2	3.9	3.85
19	3.2	2.85	3.15	12.7	6.75	6.45	8.95	10.75	12.55	7.55	3.9	3.85
20	3.1	2.9	3.2	7.9	6.2	6.25	9.45	10.9	12.6	7.9	3.95	3.9
21	3.05	3.05	3.3	7.0	7.45	6.65	9.9	10.45	12.45	7.85	3.85	3.9
22	3.0	2.85	3.35	5.7	7.3	7.2	10.3	10.35	12.7	7.0	3.85	3.9
23	2.9	2.9	3.3	5.3	6.5	8.1	10.3	9.4	12.2	7.5	3.95	3.9
24	2.95	2.95	3.2	5.15	6.2	11.55	9.15	9.15	11.75	7.0	3.95	3.85
25	3.1	2.85	3.0	4.9	6.1	12.05	8.55	9.15	12.25	6.65	4.2	3.95
26	3.0	2.85	2.95	4.85	6.0	11.85	8.1	10.5	11.55	6.45	4.0	3.9
27	3.2	3.2	3.05	4.7	6.25	10.45	8.25	10.5	10.9	6.25	3.8	4.0
28	3.15	3.25	3.1	4.6	6.45	9.15	8.5	10.75	10.1	6.25	3.85	4.0
29	3.0	3.3	3.1	4.55	.....	8.5	8.05	10.2	10.45	5.65	3.8	3.9
30	3.05	3.15	3.1	4.5	.....	8.7	8.0	9.35	10.5	5.45	3.95	3.85
31	3.15	.....	3.15	4.45	.....	13.45	.....	9.25	.....	5.3	3.85	.....
1906–7.												
1	3.8	4.0	3.9	5.7	7.65	6.45	[a]10.4	9.55	12.45	11.0	6.65	4.4
2	3.9	3.95	4.1	5.75	13.55	6.65	[a]10.3	9.55	12.65	10.4	6.4	4.35
3	3.85	3.95	3.75	5.15	11.55	6.55	[a]10.2	9.8	12.35	10.55	6.3	4.35
4	3.75	4.1	3.95	6.15	12.1	6.85	[a]10.0	9.4	12.35	10.95	6.0	4.5
5	3.95	5.15	4.0	6.1	10.95	7.65	[a]9.9	8.6	12.15	10.85	5.8	4.5

[a] Gage height estimated.

Daily gage height, in feet, of Mokelumne River near Clements, Cal., for 1904–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906–7.												
6	4.0	4.5	4.0	5.35	9.45	7.25	a9.7	8.55	11.55	10.2	5.8	4.6
7	3.85	4.4	3.95	5.25	8.8	6.9	a9.6	8.15	11.2	10.05	5.7	4.3
8	3.7	4.15	4.0	6.45	8.3	6.8	a9.4	8.45	9.55	10.6	5.55	4.35
9	4.0	4.1	4.2	6.65	8.05	7.5	a9.3	9.25	9.8	10.15	5.55	4.1
10	3.95	4.1	3.95	5.75	7.95	9.7	9.1	10.25	10.3	9.85	5.5	4.2
11	3.85	3.75	10.8	5.20	7.7	9.0	9.5	10.15	11.5	9.7	5.25	4.25
12	3.95	3.8	8.35	4.95	7.55	8.0	9.85	9.55	9.85	9.75	5.25	4.1
13	3.9	3.8	5.75	5.1	7.3	7.55	10.35	8.6	9.05	9.4	5.15	4.1
14	3.85	3.9	4.95	6.55	7.15	7.25	10.95	8.45	8.35	8.9	5.15	4.3
15	3.9	4.1	4.7	5.6	7.05	7.05	10.8	9.25	7.9	8.55	5.0	4.2
16	3.95	4.2	4.7	5.1	7.0	7.15	10.05	10.0	7.8	8.25	5.0	4.2
17	3.95	4.0	4.4	5.3	7.25	13.6	9.85	10.65	7.9	8.2	5.05	4.25
18	3.95	4.2	4.35	5.4	7.05	17.0	9.95	11.45	8.25	8.1	4.9	4.25
19	3.9	4.2	4.25	5.3	6.85	21.0	10.6	11.5	9.35	8.1	4.9	4.25
20	3.9	4.2	4.3	4.9	6.8	a17.9	10.8	9.8	10.4	8.2	4.8	4.3
21	3.75	4.2	4.3	4.85	6.75	a15.9	10.15	10.05	10.9	7.9	4.7	4.25
22	3.75	4.2	4.3	4.9	6.85	a13.0	10.3	10.1	11.1	7.35	4.7	4.3
23	3.95	4.2	4.9	4.9	7.35	a13.3	10.6	9.5	9.9	7.35	4.5	4.25
24	3.9	3.85	4.1	4.95	7.1	a13.0	10.4	9.45	8.95	7.45	4.45	4.2
25	3.95	3.85	6.7	5.55	7.25	a11.6	10.3	9.35	9.15	7.65	4.55	4.3
26	4.0	3.6	8.55	5.9	7.05	a11.2	10.35	9.45	a10.0	7.4	4.4	4.2
27	3.85	3.95	8.5	5.5	6.8	a11.1	10.25	9.5	10.8	7.05	4.35	4.3
28	4.05	3.95	7.1	9.65	6.55	a11.0	10.2	11.0	11.25	7.3	4.5	4.3
29	3.8	4.1	6.3	8.75	.....	a10.8	9.95	11.4	11.6	7.35	4.4	4.45
30	3.95	3.9	4.8	7.15	.....	a10.7	9.65	11.7	11.6	7.05	4.4	4.2
31	4.05	.....	6.8	6.9	.....	a10.5	.....	12.3	.....	6.75	4.7	.....
1907–8.												
1	4.3	4.25	4.25	4.9	4.35	5.0	5.2	8.0	6.55	4.8	3.5	3.45
2	4.35	4.2	4.2	4.6	4.4	5.1	5.15	8.0	6.6	4.8	3.6	3.65
3	4.4	4.25	4.05	4.5	4.6	5.3	5.1	7.1	6.3	4.65	3.5	3.65
4	4.45	4.2	4.25	4.75	4.7	5.3	5.15	6.75	6.2	4.5	3.6	3.7
5	4.55	4.25	4.25	4.55	4.5	4.8	5.55	6.6	6.15	4.45	3.6	3.8
6	4.35	4.25	4.25	4.55	4.45	4.6	6.0	7.0	6.55	4.35	3.55	3.75
7	4.25	4.35	4.45	4.45	4.4	4.6	5.85	7.55	6.55	4.35	3.5	3.45
8	4.25	4.2	4.8	4.4	4.35	4.15	5.55	7.0	6.65	4.3	3.4	3.4
9	4.35	4.35	4.3	4.4	5.45	4.1	5.3	6.6	6.75	4.15	3.45	3.65
10	4.35	4.25	4.3	4.4	4.85	4.2	5.9	6.4	6.85	4.1	3.3	3.65
11	4.35	4.15	4.95	4.2	4.7	4.35	6.5	7.0	6.85	3.95	3.5	3.55
12	4.25	4.25	4.8	4.2	4.6	4.85	7.2	6.6	6.75	3.95	a3.5	3.75
13	4.25	4.35	4.25	4.25	4.3	5.0	7.35	6.45	6.45	4.05	3.55	3.7
14	4.2	4.25	4.45	5.65	4.35	5.4	7.6	6.5	6.35	4.0	3.55	3.55
15	4.25	4.35	4.55	5.0	4.15	5.45	7.45	6.6	6.4	3.9	3.45	3.65
16	4.35	4.15	4.3	4.65	4.25	5.8	6.95	6.4	6.2	3.8	3.5	3.75
17	4.35	4.25	4.3	4.6	4.2	5.85	6.65	6.15	5.9	3.75	3.45	3.6
18	4.3	4.25	4.4	4.6	4.3	5.8	6.7	6.8	5.5	3.65	3.45	3.8
19	4.35	4.15	4.2	4.3	4.2	5.8	7.5	7.05	5.55	3.7	3.35	3.8
20	4.2	4.15	4.3	4.5	4.2	5.75	8.2	6.6	5.4	3.75	3.5	3.8
21	4.25	4.15	4.25	5.0	4.2	5.85	8.2	6.5	5.8	3.75	3.3	3.65
22	4.35	4.25	4.2	5.55	4.1	5.7	7.2	6.7	5.7	3.7	3.5	3.7
23	4.25	4.25	4.2	5.15	4.2	5.6	6.8	7.15	5.4	3.65	3.65	3.75
24	4.35	4.25	4.2	5.35	4.05	5.8	6.45	7.2	5.5	3.6	3.35	3.8
25	4.45	3.95	4.25	5.3	4.05	5.9	6.35	7.25	5.3	3.5	3.35	a3.7
26	4.5	4.25	4.2	5.25	4.15	5.8	6.5	7.3	5.15	3.35	3.55	3.75
27	4.55	4.25	5.05	4.9	4.25	5.55	7.0	7.2	5.2	3.4	3.55	3.55
28	4.35	4.25	5.3	4.75	4.5	5.25	8.1	7.3	4.95	3.6	3.55	3.45
29	4.25	4.25	4.9	4.65	5.2	5.25	7.8	7.4	4.85	3.6	3.6	3.7
30	4.25	4.25	4.6	4.5	.....	5.25	8.35	7.2	4.8	3.4	3.6	3.7
31	4.35	.....	5.1	4.5	.....	5.35	.....	6.95	.....	3.5	3.35	.....
1908–9.												
1	3.65	3.8	3.85	3.65	6.4	6.4	6.15	9.5	11.6	7.75	4.45	3.6
2	3.75	3.65	3.8	3.55	6.2	6.3	6.35	9.9	12.5	7.65	4.5	3.8
3	3.6	3.6	3.9	3.65	7.05	6.7	6.8	10.2	11.85	7.4	4.45	3.7
4	3.65	3.65	3.85	4.0	6.8	7.85	6.9	10.6	12.25	6.95	4.45	3.8
5	3.55	3.6	4.25	3.9	7.0	7.8	7.0	10.75	12.0	6.65	4.3	3.7
6	3.65	3.65	4.3	6.45	6.05	7.75	6.75	10.7	11.35	6.35	4.25	3.7
7	3.55	3.65	3.75	5.7	7.25	7.4	6.85	10.5	10.65	6.05	4.25	3.7
8	3.45	3.55	3.95	5.45	7.3	7.25	6.8	10.55	10.6	6.0	4.2	3.6
9	3.6	3.5	4.1	5.55	6.7	7.05	7.05	10.05	10.2	6.0	4.1	3.6
10	3.5	3.65	3.95	5.4	6.2	6.8	7.35	9.8	10.1	5.85	4.3	3.8

a Gage height estimated.

Daily gage height, in feet, of Mokelumne River near Clements, Cal., for 1904–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908–9.												
11	3.55	3.6	3.85	4.15	7.55	6.65	7.35	9.0	10.05	5.9	4.0	3.7
12	3.55	3.65	3.9	4.5	12.2	6.5	7.4	8.55	10.75	5.9	4.05	3.95
13	3.45	3.6	3.9	7.55	10.4	6.45	7.5	8.15	9.5	5.8	4.15	3.9
14	3.55	3.55	3.65	16.15	8.5	6.45	8.25	8.25	9.9	5.65	4.05	3.85
15	3.95	3.55	4.05	16.0	7.85	6.45	8.8	8.75	9.8	5.45	3.95	3.8
16	4.85	3.55	3.85	14.15	7.7	6.55	9.4	8.5	9.8	5.4	3.7	3.75
17	3.95	3.55	3.65	11.4	7.95	6.55	9.9	8.5	9.35	5.4	3.85	3.75
18	3.75	3.6	3.55	9.9	7.95	6.55	10.15	8.7	8.65	5.35	3.7	3.75
19	3.55	3.5	3.45	8.65	7.65	6.5	10.1	8.65	8.5	5.15	3.6	3.75
20	3.8	3.5	3.45	9.0	7.45	6.45	9.05	9.65	8.25	5.15	3.55	3.75
21	3.7	3.6	3.55	14.1	7.5	6.5	8.5	9.85	9.3	5.0	3.5	3.75
22	3.7	3.5	3.55	11.35	7.2	6.4	8.1	8.45	9.3	4.9	3.5	3.7
23	3.65	3.55	3.75	9.3	6.95	6.3	8.15	7.9	9.75	4.7	3.5	3.7
24	3.6	3.95	3.65	8.25	6.9	6.2	8.2	7.5	9.5	4.7	3.55	3.75
25	3.65	3.85	3.55	8.05	6.75	6.3	8.3	8.0	9.1	4.55	3.5	3.6
26	3.5	3.65	3.35	7.75	6.55	6.2	9.0	9.5	8.3	4.55	3.6	3.75
27	3.55	3.55	3.5	7.3	6.45	6.05	9.7	9.1	8.9	4.5	3.85	3.75
28	3.6	3.5	3.35	7.1	6.05	6.05	9.1	9.7	8.25	4.5	3.95	3.75
29	3.6	3.6	3.65	6.7	.....	6.4	9.0	8.15	8.45	4.5	4.05	3.85
30	3.45	3.55	3.5	6.9	.....	6.15	9.3	8.55	8.05	4.45	3.75	3.85
31	3.55	.....	3.5	6.5	.....	6.15	.....	10.15	.....	4.45	3.6	.....
1909–10.												
1	3.95	4.25	6.2	9.0	6.05	6.7	7.2	7.75	8.35	4.25	3.4	3.35
2	4.1	4.2	9.45	7.45	5.95	6.5	7.15	7.7	8.3	4.15	3.4	3.15
3	4.15	4.15	12.6	6.45	5.85	6 7	7.15	7.3	7.8	4.1	3.3	3.25
4	4.25	4.25	7.8	6.35	5.8	6.9	7 2	7.8	7.75	4.05	3.25	3.2
5	4.3	4.1	7.15	6.1	5.8	6.9	7.1	7.7	6.75	3.9	3.3	3.25
6	4.25	4.2	6.45	6.0	5.8	7.0	7.3	8.45	6.15	4.1	3.35	3.1
7	4.3	4.1	6.5	5.9	5.7	6.9	7.55	8.7	6.0	4.0	3.2	3.2
8	4.05	4.15	6.4	5.9	5.9	6.9	7.75	9.25	6.0	3.85	3.15	3.25
9	4.05	4.4	8.4	5.8	5.75	6.95	8.5	10.3	5.85	3.9	2.95	3.1
10	4.1	4.7	7.55	5.65	5.6	7.05	8.5	9.85	6.0	3.9	2.95	3.2
11	3.9	4.75	7.1	5.65	5.55	7.2	8.35	9.8	5.7	3.85	2.85	3.15
12	4.1	4.6	6.75	5.6	5.5	7.4	7.65	9.6	5.85	4.1	3.05	3.15
13	4.1	4.55	6.45	5.5	5.55	7.3	7.55	9.25	5.7	3.9	3.1	3.1
14	4.1	4.75	6.4	5.75	5.5	7.4	7.85	9.5	5.6	3.85	3.15	3.15
15	4.1	4.7	6.1	6.7	5.55	7.05	8.1	9.55	.....	3.8	3.35	3.3
16	4.0	4.7	6.05	6.55	5.55	6.8	8.4	8.35	.....	3.75	3.6	3.5
17	4.25	4.55	5.85	6.3	5.6	6.8	9.1	8.2	.....	3.75	3.4	3.65
18	3.85	4.3	5.75	6.05	5.45	7.35	9.55	8 05	.....	3.7	3.15	3.9
19	3.95	4.35	5.7	5.8	5.9	9.85	9.75	8.15	.....	3.8	3.25	3.6
20	3.95	5.15	5.65	5.75	5.55	11.4	10.05	8.2	.....	3.9	3.3	3.65
21	4.1	12.95	5.55	5.6	5.5	9.95	9.1	8.3	.....	3.8	3.2	3.65
22	4.05	8.75	5.7	5.55	5.55	9.2	8.9	8.55	.....	4.25	3.25	3.45
23	3.9	8.45	5.55	6.3	5.6	9.4	9.5	8.7	.....	3.7	3.45	3.35
24	4.0	7.1	5.4	7.8	5.5	8.45	9.9	9.2	.....	3.8	3.25	3.25
25	3.8	7.95	5.25	7.35	5.9	8.2	10.0	8.2	4.5	3.7	3.45	3.15
26	4.05	6.65	5.3	6.6	5.8	7.55	10.15	8.3	4.45	3.7	3.35	3.25
27	4.0	6.4	5.25	6.3	5.75	7.3	10.3	8.15	4.45	3.6	3.35	3.2
28	3.95	6.25	5.2	6.15	5.95	7.05	9.65	8.0	4.55	3.7	3.2	3.35
29	3 95	6.25	5.1	6.1	.....	7.0	9.2	7.45	4.4	3.4	3.3	3.3
30	4.4	6.2	5.05	6.1	.....	7.0	8.6	7.85	4.4	3.4	3.25	3.2
31	4.4	.....	9.15	5.9	.....	7.2	.....	8.25	.....	3.5	3.2	.....
1910–11.												
1	3.25	3.65	3.9	4.05	12.8	6.25	9.4	8.35	9.4	10.2	4.45	3.55
2	3.25	3.75	4.05	3.9	10.0	6.8	9.7	8.35	9.9	8.7	4.35	3.4
3	3.25	3.65	4.4	3.85	9.1	7.7	10.4	8.25	10.05	8.85	4.35	3.4
4	3.5	3.55	5.1	3.95	8.75	8.15	10.25	9.6	10.3	8.6	4.35	3.3
5	3.4	3.7	4.8	4.05	8.6	8.0	10.6	10.2	11.7	8.15	4.3	3.45
6	3.3	3.75	4.75	4.15	8.25	7.9	11.4	9.7	12.2	8.3	4.4	3.4
7	3.4	3.7	4.7	4.05	8.5	11.75	10.65	9.3	10.9	8.2	.....	3.5
8	3.4	3.6	4.7	3.95	7.9	11.45	10.7	9.25	10.15	7.85	.....	3.6
9	3.45	3.55	4.55	3.8	7.8	10.5	10.25	9.35	10.5	7.6	.....	3.5
10	3.5	3.55	4.55	4.7	7.6	9.7	9.65	9.5	11.55	7.45	.....	3.35

Daily gage height, in feet, of Mokelumne River near Clements, Cal., for 1904–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
11	3.25	3.7	5.25	5.1	7.4	8.45	9.5	9.45	11.95	7.45	3.95	3.5
12	3.65	3.75	5.3	6.55	7.15	8.05	8.8	9.35	12.25	7.25	3.8	3.45
13	3.7	4.05	4.85	8.85	7.35	7.9	9.0	.....	11.5	7.35	3.85	3.35
14	3.6	3.85	4.55	8.0	7.65	7.4	9.35	9.05	11.2	7.5	3.75	3.3
15	3.55	3.95	4.9	8.9	7.55	7.35	8.75	9.15	10.95	.....	3.85	3.4
16	3.5	3.9	4.85	5.6	7.35	7.8	8.5	8.5	11.45	7.4	3.8	3.25
17	3.45	3.75	4.65	5.0	7.1	8.25	8.45	7.9	11.75	7.3	3.7	3.25
18	3.45	3.9	4.5	4.75	6.4	8.25	8.05	8.1	12.3	6.7	3.75	3.4
19	3.5	3.85	4.3	5.0	6.0	8.55	8.6	8.1	11.15	6.1	3.7	3.5
20	3.6	3.9	4.05	7.0	5.8	8.3	8.25	8.7	10.75	5.7	3.8	3.65
21	3.6	3.85	3.9	6.75	6.3	8.0	8.6	9.5	10.8	5.35	3.7	3.6
22	3.55	3.95	4.35	6.0	6.7	7.75	8.9	10.45	10.15	5.3	3.7	3.7
23	3.75	4.05	4.6	5.95	7.25	7.6	9.25	11.85	9.55	5.2	3.6	3.45
24	3.65	4.15	4.2	8.55	7.05	7.95	9.7	11.95	8.95	.....	3.75	3.65
25	3.55	4.05	3.9	10.35	6.7	8.15	10.35	11.1	8.3	.....	3.65	3.5
26	3.65	3.95	4.05	8.9	6.65	8.35	9.9	10.05	8.6	.....	3.7	3.45
27	3.6	4.15	3.95	7.05	6.2	8.6	9.75	9.7	8.75	.....	3.7	3.65
28	3.65	4.05	3.85	6.6	5.9	8.8	9.1	9.5	8.8	.....	3.75	3.45
29	3.7	4.0	3.95	8.55	.....	8.95	8.6	9.35	8.6	4.5	3.65	3.65
30	3.75	3.95	4.05	17.45	.....	9.2	8.35	8.85	8.9	4.5	3.45	3.65
31	3.75	.....	4.3	17.4	.....	.....	.....	8.55	.....	4.5	3.45	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	3.95	3.25	3.5	3.85	3.65	3.45	4.15	5.5	9.2
2	4.05	3.5	3.35	3.9	3.7	3.35	4.25	5.6	9.8
3	3.65	3.35	3.45	3.65	3.6	3.25	4.35	5.3	10.0
4	3.55	3.5	3.3	3.75	3.6	3.35	4.55	5.4	9.7
5	3.5	3.3	3.35	3.65	3.55	3.35	4.45	5.6	9.4
6	3.55	3.6	3.25	3.6	3.6	3.9	4.55	5.6	9.6
7	3.4	3.6	3.2	3.7	3.65	5.5	4.45	6.0	8.8
8	3.6	3.5	3.3	3.85	3.75	5.2	4.6	6.2	8.2
9	3.35	3.65	3.35	3.75	3.55	4.7	4.9	6.4	7.6
10	3.15	3.4	3.35	3.7	3.6	4.3	5.1	6.2	7.9
11	3.35	4.3	3.3	3.9	3.65	4.05	5.6	7.2	8.2
12	3.35	4.2	3.45	4.1	3.6	4.0	5.4	7.6	8.0
13	3.25	3.95	3.25	4.15	3.75	4.85	5.0	8.0	7.6
14	3.3	3.8	3.3	3.75	3.8	4.75	4.6	7.8	7.2
15	3.25	.....	3.5	3.6	3.75	4.65	4.5	8.7	6.8
16	3.25	.....	3.45	3.7	3.55	4.3	4.55	8.6	6.4
17	3.4	3.65	3.6	3.85	3.7	.....	4.35	9.2	5.8
18	3.55	3.7	3.55	4.0	3.8	4.15	4.35	.....	6.3
19	3.3	3.8	3.35	4.25	3.8	4.3	4.15	8.5	6.2
20	3.1	3.6	3.35	3.75	3.65	4.0	4.25	8.0	5.7
21	3.1	3.65	3.25	3.75	3.7	3.7	4.05	7.8	6.2
22	3.0	3.75	3.2	3.7	3.6	3.7	4.15	6.6	5.6
23	3.35	3.8	3.2	3.6	3.65	3.7	4.05	5.0	4.95
24	3.3	3.9	3.35	3.5	3.55	3.95	4.4	5.0	4.75
25	3.35	3.75	3.35	3.55	3.5	3.8	4.7	6.8	4.3
26	3.6	3.65	3.25	3.6	3.55	3.85	4.8	7.9	4.25
27	3.2	3.6	3.25	3.7	3.5	3.95	4.65	7.8	4.2
28	3.35	3.65	3.35	3.95	3.45	4.05	4.4	7.6	4.1
29	3.55	3.55	3.4	3.9	3.4	4.2	5.0	9.2	3.95
30	3.4	3.45	3.7	3.7	.....	4.2	5.6	9.6	3.8
31	3.2	.....	3.8	3.65	.....	4.1	.....	9.9	.....

NOTE.—Gage heights Jan. 10–15, 19–21, 23 to Feb. 2, Mar. 6 and 7, 1911, determined by means of a graph.

Rating tables for Mokelumne River near Clements, Cal.

Jan. 1 to Dec. 31, 1905.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
3.00	78	4.20	357	5.40	932	7.00	2,080
3.10	96	4.30	391	5.50	995	7.20	2,240
3.20	115	4.40	427	5.60	1,059	7.40	2,400
3.30	134	4.50	465	5.70	1,124	7.60	2,560
3.40	154	4.60	506	5.80	1,191	7.80	2,730
3.50	174	4.70	550	5.90	1,260	8.00	2,900
3.60	195	4.80	597	6.00	1,330	8.20	3,070
3.70	218	4.90	647	6.20	1,475	8.40	3,250
3.80	242	5.00	700	6.40	1,625	8.60	3,430
3.90	268	5.10	755	6.60	1,775	8.80	3,610
4.00	295	5.20	812	6.80	1,925	9.00	3,800
4.10	325	5.30	871				

NOTE.—The above table is based on 12 discharge measurements made during 1905. It is well defined between gage heights 2.9 feet and 6.2 feet. The table has been extended beyond these limits, being based on one measurement at 9 feet gage height.

Jan. 1 to Dec. 31, 1906.

3.00	50	4.30	315	5.60	880	7.80	2,250
3.10	60	4.40	350	5.70	930	8.00	2,390
3.20	70	4.50	390	5.80	980	8.20	2,530
3.30	80	4.60	430	5.90	1,030	8.40	2,690
3.40	90	4.70	470	6.00	1,090	8.60	2,850
3.50	105	4.80	510	6.20	1,210	8.80	3,010
3.60	120	4.90	550	6.40	1,330	9.00	3,180
3.70	140	5.00	590	6.60	1,450	10.00	4,125
3.80	160	5.10	630	6.80	1,570	11.00	5,175
3.90	190	5.20	680	7.00	1,690	12.00	6,225
4.00	220	5.30	730	7.20	1,830	13.00	7,275
4.10	250	5.40	780	7.40	1,970	14.00	8,325
4.20	280	5.50	830	7.60	2,110		

NOTE.—This table is based on 27 discharge measurements made during 1906 and is well defined between gage heights 3.7 feet and 14.3 feet.

Jan. 1 to Dec. 31, 1907.

4.00	150	5.50	885	7.00	1,885	10.00	4,340
4.10	185	5.60	945	7.20	2,025	11.00	5,310
4.20	220	5.70	1,005	7.40	2,170	12.00	6,310
4.30	260	5.80	1,065	7.60	2,320	13.00	7,310
4.40	305	5.90	1,130	7.80	2,470	14.00	8,310
4.50	350	6.00	1,195	8.00	2,620	15.00	9,310
4.60	400	6.10	1,260	8.20	2,780	16.00	10,310
4.70	450	6.20	1,325	8.40	2,940	17.00	11,310
4.80	500	6.30	1,395	8.60	3,100	18.00	12,310
4.90	550	6.40	1,465	8.80	3,260	19.00	13,310
5.00	605	6.50	1,535	9.00	3,440	20.00	14,310
5.10	660	6.60	1,605	9.20	3,620	21.00	15,310
5.20	715	6.70	1,675	9.40	3,800		
5.30	770	6.80	1,745	9.60	3,980		
5.40	825	6.90	1,815	9.80	4,160		

NOTE.—This table is not applicable for periods of obstructed channel. It is based on six discharge measurements made during 1907 and previous high-water measurements and is well defined between gage heights 4 feet and 9.5 feet.

Jan. 1 to Dec. 31, 1908.

3.30	80	4.70	520	6.10	1,315	8.00	2,680
3.40	90	4.80	570	6.20	1,380	8.20	2,840
3.50	105	4.90	620	6.30	1,450	8.40	3,000
3.60	120	5.00	670	6.40	1,520	8.60	3,160
3.70	140	5.10	725	6.50	1,590	8.80	3,330
3.80	165	5.20	780	6.60	1,660	9.00	3,500
3.90	195	5.30	835	6.70	1,730	9.20	3,670
4.00	225	5.40	890	6.80	1,800	9.40	3,840
4.10	260	5.50	945	6.90	1,870	9.60	4,010
4.20	295	5.60	1,000	7.00	1,940	9.80	4,180
4.30	335	5.70	1,060	7.20	2,080	10.00	4,350
4.40	375	5.80	1,120	7.40	2,225		
4.50	420	5.90	1,185	7.60	2,375		
4.60	470	6.00	1,250	7.80	2,525		

NOTE.—This table is not applicable for periods of obstructed channel. It is based on five discharge measurements made during 1907 and 1908 and on previous high-water measurements and is fairly well defined between gage heights 3.4 feet and 8 feet.

Daily discharge, in second-feet, of Mokelumne River near Clements, Cal., for 1909–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	130	1,520	1,520	1,350	3,920	5,900	2,320	220	56
2	112	1,380	1,450	1,480	4,260	6,800	2,240	235	85
3	130	1,980	1,730	1,800	4,530	6,150	2,040	220	70
4	225	1,800	2,560	1,870	4,900	6,550	1,700	220	85
5	195	1,940	2,520	1,940	5,050	6,300	1,480	180	70
6	1,560	1,280	2,490	1,760	5,000	5,650	1,280	168	70
7	1,060	2,120	2,220	1,840	4,800	4,950	1,070	168	70
8	918	2,150	2,120	1,800	4,850	4,900	1,040	155	56
9	972	1,730	1,980	1,980	4,400	4,530	1,040	130	56
10	890	1,380	1,800	2,190	4,180	4,440	940	180	85
11	278	2,340	1,700	2,190	3,500	4,400	970	115	70
12	420	6,500	1,590	2,220	3,120	5,050	970	122	108
13	2,340	4,710	1,560	2,300	2,800	3,920	905	142	100
14	10,400	3,080	1,560	2,880	2,880	4,260	810	122	92
15	10,300	2,500	1,560	3,330	3,290	4,180	690	108	85
16	8,450	2,450	1,620	3,840	3,080	4,180	660	70	78
17	5,700	2,640	1,620	4,260	3,080	3,800	660	92	78
18	4,260	2,640	1,620	4,480	3,240	3,200	630	70	78
19	3,200	2,410	1,590	4,440	3,200	3,080	512	56	78
20	3,500	2,260	1,560	3,540	4,050	2,880	512	51	78
21	8,400	2,300	1,590	3,080	4,220	3,760	435	46	78
22	5,650	2,080	1,520	2,760	3,040	3,760	390	46	70
23	3,760	1,900	1,450	2,800	2,600	4,140	305	46	70
24	2,880	1,870	1,380	2,840	2,300	3,920	305	51	78
25	2,720	1,760	1,450	2,920	2,680	3,580	252	46	56
26	2,490	1,620	1,380	3,500	3,920	2,920	252	56	78
27	2,150	1,560	1,280	4,100	3,580	3,420	235	92	78
28	2,010	1,280	1,280	3,580	4,100	2,880	235	108	78
29	1,730	.....	1,520	3,500	2,800	3,040	235	122	92
30	1,870	.....	1,350	3,760	3,120	2,720	220	78	92
31	1,590	.....	1,350	.....	4,480	.....	220	56	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
1	108	168	1,170	3,600	1,160	1,620	2,020	2,460	3,000	273	84	76
2	130	155	3,800	2,220	1,100	1,480	1,980	2,420	2,950	244	84	50
3	142	142	6,900	1,440	1,040	1,620	1,980	2,100	2,500	230	69	62
4	168	168	2,360	1,380	1,010	1,780	2,020	2,500	2,460	217	62	56
5	180	130	1,850	1,200	1,010	1,780	1,940	2,420	1,660	181	69	62
6	168	155	1,340	1,130	1,010	1,860	2,100	3,080	1,240	230	76	45
7	180	130	1,380	1,070	950	1,780	2,300	3,310	1,130	204	56	56
8	122	142	1,310	1,070	1,070	1,780	2,460	3,850	1,130	170	50	62
9	122	205	2,860	1,010	980	1,820	3,130	4,900	1,040	181	32	45
10	130	305	2,160	920	890	1,900	3,130	4,450	1,130	181	32	56
11	100	325	1,820	920	860	2,020	3,000	4,400	950	170	25	50
12	130	270	1,560	890	830	2,180	2,380	4,200	1,040	230	40	50
13	130	252	1,340	830	860	2,100	2,300	3,850	950	181	45	45
14	130	325	1,310	980	830	2,180	2,540	4,100	890	170	50	50
15	130	305	1,100	1,620	860	1,900	2,770	4,150	830	159	76	69
16	115	305	1,060	1,520	860	1,700	3,040	3,000	770	149	120	102
17	168	252	938	1,340	890	1,700	3,700	2,860	710	149	84	130
18	92	180	872	1,160	800	2,140	4,150	2,720	660	139	50	181
19	108	192	840	1,010	1,070	4,450	4,350	2,820	610	159	62	120
20	108	512	810	980	860	6,110	4,650	2,860	565	181	69	130
21	130	7,200	750	890	830	4,550	3,700	2,950	520	159	56	130
22	122	3,160	840	860	860	3,800	3,500	3,180	475	273	62	93
23	100	2,900	750	1,340	890	4,000	4,100	3,310	433	139	93	76
24	115	1,820	660	2,500	830	3,080	4,500	3,800	394	159	62	62
25	85	2,480	570	2,140	1,070	2,860	4,600	2,860	356	139	93	50
26	122	1,480	600	1,550	1,010	2,300	4,750	2,950	338	139	76	62
27	115	1,310	570	1,340	980	2,100	4,900	2,820	338	120	76	56
28	108	1,200	540	1,240	1,100	1,900	4,250	2,680	375	139	56	76
29	108	1,200	485	1,200	.....	1,860	3,800	2,220	321	84	69	69
30	205	1,170	460	1,200	.....	1,860	3,220	2,540	321	84	62	56
31	205	.....	3,520	1,070	.....	2,020	.....	2,900	.....	102	56	.....

Daily discharge, in second-feet, of Mokelumne River near Clements, Cal., for 1909–1912— Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	62	130	181	217	8,800	1,430	4,240	3,150	4,240	5,160	445	170
2	62	149	217	181	4,920	1,820	4,570	3,150	4,800	3,500	408	140
3	62	130	321	170	3,910	2,550	5,400	3,050	4,980	3,650	408	140
4	102	111	610	192	3,550	2,960	5,220	4,460	5,280	3,400	408	120
5	84	139	475	217	3,400	2,820	5,660	5,160	7,140	2,960	390	150
6	69	149	454	244	3,050	2,730	6,720	4,570	7,880	3,100	425	140
7	84	139	433	217	3,300	7,210	5,720	4,130	6,050	3,000	395	160
8	84	120	433	192	2,730	6,790	5,790	4,080	5,100	2,680	365	180
9	93	111	375	159	2,640	5,530	5,220	4,180	5,530	2,460	335	160
10	102	111	375	433	2,460	4,570	4,520	4,350	6,930	2,330	305	130
11	62	139	685	610	2,290	3,250	4,350	4,300	7,500	2,330	275	160
12	130	149	710	1,520	2,090	2,860	3,600	4,180	7,960	2,170	230	150
13	139	217	498	3,500	2,250	2,730	3,800	4,020	6,860	2,250	245	130
14	120	170	375	2,680	2,500	2,290	4,190	3,860	6,440	2,370	218	120
15	111	192	520	3,560	2,420	2,250	3,550	3,960	6,120	2,330	245	140
16	102	181	498	890	2,250	2,640	3,300	3,300	6,790	2,290	230	112
17	93	149	414	565	2,050	3,050	3,250	2,730	7,210	2,210	205	112
18	93	181	356	454	1,520	3,050	2,860	2,910	8,030	1,740	218	140
19	102	170	288	565	1,250	3,350	3,400	2,910	6,380	1,320	205	160
20	120	181	217	1,860	1,120	3,100	3,050	3,500	5,860	1,060	230	192
21	120	170	181	1,660	1,460	2,820	3,400	4,350	5,920	858	205	180
22	111	192	304	1,130	1,740	2,600	3,700	5,460	5,100	830	205	205
23	149	217	394	1,100	2,170	2,460	4,080	7,360	4,400	780	180	150
24	130	244	258	3,200	2,010	2,780	4,570	7,500	3,750	717	218	192
25	111	217	181	5,240	1,740	2,960	5,340	6,310	3,100	654	192	160
26	130	192	217	3,560	1,710	3,150	4,800	4,980	3,400	591	205	150
27	120	244	192	1,900	1,380	3,400	4,620	4,570	3,550	528	205	192
28	130	217	170	1,550	1,180	3,600	3,910	4,350	3,600	465	218	150
29	139	204	192	3,200	.....	3,750	3,400	4,180	3,400	465	192	192
30	149	192	217	16,700	.....	4,020	3,150	3,650	3,700	465	150	192
31	149	.....	288	16,600	.....	4,130	.....	3,350	.....	465	150	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Juné.
1911–12.									
1	275	112	160	245	192	150	338	940	4,020
2	305	160	130	260	205	130	372	1,000	4,680
3	192	130	150	192	180	112	408	830	4,920
4	170	160	120	218	180	130	485	885	4,570
5	160	120	130	192	170	130	445	1,000	4,240
6	170	180	112	180	180	260	485	1,000	4,460
7	140	180	105	205	192	940	445	1,250	3,600
8	180	160	120	245	218	780	505	1,380	3,000
9	130	192	130	218	170	545	635	1,520	2,460
10	98	140	130	205	180	390	730	1,380	2,730
11	130	390	120	260	192	305	1,000	2,130	3,000
12	130	355	150	320	180	290	885	2,460	2,820
13	112	275	112	338	218	612	680	2,820	2,460
14	120	230	120	218	230	568	505	2,640	2,130
15	112	217	160	180	218	525	465	3,500	1,820
16	112	205	150	205	170	390	485	3,400	1,520
17	140	192	180	245	205	364	408	4,020	1,120
18	170	205	170	290	230	338	408	3,660	1,460
19	120	230	130	372	230	390	338	3,300	1,380
20	90	180	130	218	192	290	372	2,820	1,060
21	90	192	112	218	205	205	305	2,640	1,380
22	75	218	105	205	180	205	338	1,670	1,000
23	130	230	105	180	192	205	305	680	658
24	120	260	130	160	170	275	425	680	568
25	130	218	130	170	160	230	545	1,820	390
26	180	192	112	180	170	245	590	2,730	372
27	105	180	112	205	160	275	525	2,640	355
28	130	192	130	275	150	305	425	2,460	320
29	170	170	140	260	140	355	680	4,020	275
30	140	150	205	205	.....	355	1,000	4,460	230
31	105	.....	230	192	.....	320	.....	4,800	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: Jan. 1 to June 30, 1909, well defined between 90 and 200 second-feet; July 1 to Dec. 31, 1909, fairly well defined; Jan. 1 to Dec. 31, 1910, well defined between 60 and 3,500 second-feet; Jan. 1 to Jan. 31, 1911, well defined; Feb. 1, 1911, to June 30, 1912, fairly well defined. Discharge estimated June 15–24, 1910. Discharge interpolated for days on which gage was not read during 1911 and 1912.

Monthly discharge of Mokelumne River near Clements, Cal., for 1905–1912.

[Drainage area, 642 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905.							
January	700	325	428	0.667	0.77	26,320	
February	2,520	409	853	1.33	1.38	47,370	
March	2,320	932	1,410	2.20	2.54	86,700	
April	3,250	1,365	1,959	3.05	3.40	116,600	
May	5,260	1,475	2,547	3.97	4.58	156,600	
June	2,688	427	1,665	2.59	2.89	99,070	
July	391	106	188	.293	.34	11,560	
August	154	60	128	.199	.23	7,870	
September	164	115	139	.217	.24	8,271	
The period						560,000	
1905–6.							
October	164	60	114	.178	.20	7,010	
November	134	43	79.4	.124	.14	4,725	
December	144	69	97.0	.151	.17	5,964	
January	6,960	55	996	1.55	1.79	61,200	
February	2,000	350	808	1.26	1.31	44,900	
March	7,750	880	2,520	3.92	4.52	155,000	
April	5,380	2,110	2,940	4.57	5.10	175,000	
May	6,750	2,730	4,700	7.32	8.44	289,000	
June	8,740	3,580	6,020	9.38	10.46	358,000	
July	7,480	730	3,540	5.51	6.35	218,000	
August	680	160	356	.554	.64	21,900	
September	350	150	202	.315	.35	12,000	
The year	8,740	43	1,860	2.90	39.47	1,350,000	
1906–7.							
October	235	140	190	.296	.34	11,700	
November	655	120	248	.386	.43	14,800	
December	4,960	150	876	1.36	1.57	53,900	
January	4,020	525	1,140	1.78	2.05	70,100	B.
February	7,860	1,570	2,780	4.33	4.51	154,000	B.
March	15,300	1,500	4,880	7.60	8.76	300,060	C.
April	5,260	3,530	4,430	6.90	7.70	264,000	C.
May	5,810	2,740	4,220	6.57	7.57	259,000	B.
June	6,960	2,470	4,720	7.35	8.20	281,000	B.
July	5,310	1,710	3,330	5.19	5.98	205,000	B.
August	1,640	282	703	1.10	1.27	43,200	B.
September	400	185	257	.400	.45	15,300	C.
The year	15,300	120	2,314	3.61	48.83	1,670,000	
1907–8.							
October	375	220	276	.430	.50	17,000	C.
November	282	135	234	.364	.41	13,900	C.
December	770	167	328	.511	.59	20,200	C.
January	1,030	295	537	.836	.96	33,000	B.
February	917	242	393	.612	.66	22,600	B.
March	1,180	260	817	1.27	1.46	50,200	B.
April	2,960	725	1,730	2.69	3.00	103,000	B.
May	2,680	1,350	1,900	2.96	3.41	117,000	B.
June	1,840	570	1,260	1.96	2.19	75,000	B.
July	570	85	229	.357	.41	14,100	B.
August	130	80	104	.162	.19	6,400	B.
September	165	97	135	.210	.23	8,030	B.
The year	2,960	80	662	1.03	14.01	480,000	
1908–9.							
October	595	97	142	.221	.25	8,730	B.
November	210	105	124	.193	.22	7,380	B.
December	335	85	161	.251	.29	9,900	B.
January	10,400	112	2,910	4.53	5.22	179,000	B.
February	6,500	1,280	2,260	3.52	3.66	126,000	A.
March	2,560	1,350	1,670	2.60	3.00	103,000	A.
April	4,480	1,350	2,810	4.38	4.89	167,000	A.
May	5,050	2,300	3,710	5.78	6.66	228,000	A.
June	6,800	2,720	4,310	6.71	7.49	256,000	B.
July	2,320	220	824	1.28	1.48	50,700	B.
August	235	46	115	.179	.21	7,070	C.
September	108	56	77.3	.120	.13	4,600	C.
The year	10,400	46	1,593	2.48	33.60	1,150,000	

Monthly discharge of Mokelumne River near Clements, Cal., for 1905–1912—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1909–10.							
October	205	85	131	0.204	0.24	8,060	C.
November	7,200	130	951	1.48	1.65	56,600	B.
December	6,900	460	1,500	2.34	2.70	92,200	B.
January	3,600	830	1,340	2.09	2.41	82,400	A.
February	1,160	800	947	1.48	1.54	52,600	A.
March	6,110	1,480	2,390	3.72	4.29	147,000	B.
April	4,900	1,940	3,240	5.05	5.63	193,000	B.
May	4,900	2,100	3,180	4.95	5.71	196,000	B.
June	3,000	321	1,000	1.56	1.74	59,500	A.
July	273	84	172	.268	.31	10,600	B.
August	120	25	64.4	.100	.12	3,960	B.
September	181	45	74.2	.116	.13	4,420	B.
The year	7,200	25	1,249	1.95	26.47	906,000	
1910–11.							
October	149	62	107	.167	.19	6,580	B.
November	244	111	170	.265	.30	10,100	B.
December	710	170	356	.555	.64	21,900	A.
January	16,700	159	2,400	3.74	4.31	148,000	A.
February	8,800	1,120	2,570	4.00	4.16	143,000	A.
March	7,210	1,430	3,310	5.16	5.95	204,000	A.
April	6,720	2,860	4,310	6.71	7.49	256,000	A.
May	7,500	2,730	4,260	6.64	7.66	262,000	A.
June	8,030	3,100	5,570	8.68	9.68	331,000	A.
July	5,160	465	1,910	2.98	3.44	117,000	A.
August	445	150	268	.417	.48	16,500	A.
September	205	112	156	.243	.27	9,280	A.
The year	16,700	62	2,117	3.30	44.57	1,530,000	
1911–12.							
October	305	75	143	.223	.26	8,790	A.
November	390	112	200	.312	.35	11,900	A.
December	230	105	136	.212	.24	8,360	A.
January	372	160	228	.355	.41	14,000	A.
February	230	140	188	.293	.32	10,800	A.
March	940	112	342	.533	.61	21,000	A.
April	1,000	305	518	.807	.90	30,800	A.
May	4,800	680	2,280	3.55	4.09	140,000	A.
June	4,920	230	2,100	3.27	3.65	125,000	A.
The period						371,000	

MOKELUMNE RIVER AT LODI, CAL.

This station is located 1 mile north of Lodi, at the railroad bridge of the Southern Pacific Co. Observations of river height were begun by the Southern Pacific Co. in 1879 and have been made at intervals since that time.

The gage is a vertical plank fastened to the south side of the middle pier and divided into feet and inches. It is 600 feet from the watchman's house. Gaging was done by lowering the meter through openings in the railroad bridge. The channel is very unfavorable for making measurements. When the water is at the 8-foot mark, the current is broken and not at right angles to the bridge.

The results obtained at this station during 1895 were so unsatisfactory that it did not seem desirable to continue work at this locality, and therefore measurements were discontinued. The Woodbridge dam, 2 miles below the railroad bridge, influences the relation of gage

height to discharge. The gates of this dam were opened on July 20, 1895, that the reservoir might be cleaned. On July 22 and 23 the gates were closed. The dam broke shortly after. During August the dam was being repaired. The influence upon the reading of river height can be noticed in the interval from July 15 to July 25.

Discharge measurements of Mokelumne River at Lodi, Cal., in 1895 and 1899.

Date.	Hydrographer.	Gage height.	Discharge.
1895.		*Feet.*	*Sec.-ft.*
Jan. 6	A. P. Davis	12.25	1,063
Mar. 20	J. B. Lippincott	8.00	1,068
Aug. 27	do	1.33	91
1899.			
Aug. 20	J. B. Lippincott		53

Daily gage height, in feet, of Mokelumne River at Lodi, Cal., for 1891–1895.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891.									
1	2.75	1.67	12.50	6.50	14.00	10.00	9.50	1.25	0.25
2	2.25	1.75	17.50	6.50	14.50	9.75	8.92	1.17	.25
3	2.25	1.83	15.50	6.75	15.00	9.50	8.33	1.08	.25
4	2.33	1.75	13.50	7.00	15.50	10.50	7.83	1.00	.25
5	2.83	1.67	11.25	7.50	15.00	11.75	7.00	1.00	.25
6	2.50	1.67	9.67	8.00	15.00	13.50	6.33	.92	.25
7	2.33	1.67	8.25	9.50	15.50	14.25	5.83	.83	.25
8	2.17	1.67	7.33	10.00	15.75	15.00	5.50	.75	.25
9	2.00	1.67	6.83	7.83	15.00	14.50	5.33	.67	.25
10	1.92	1.67	6.75	7.50	14.50	14.00	5.00	.58	.25
11	1.83	1.58	8.83	8.50	14.33	13.50	4.83	.58	.25
12	1.83	1.67	8.17	7.83	14.50	14.50	4.50	.58	.25
13	1.92	1.67	8.08	7.75	14.58	15.50	4.25	.50	.25
14	1.92	1.67	8.00	8.25	14.33	14.08	4.00	.50	.25
15	1.92	1.67	7.92	7.50	14.00	12.50	3.75	.42	.25
16	1.83	3.58	8.25	7.33	13.33	12.50	3.50	.42	.25
17	1.83	6.00	8.08	8.25	14.00	13.75	3.25	.33	.25
18	1.75	3.83	8.00	8.25	14.92	14.00	3.08	.33	.25
19	1.75	3.08	7.83	8.17	15.00	14.00	3.00	.25	.25
20	1.75	2.75	7.50	8.67	15.50	13.00	2.92	.25	.25
21	1.75	2.75	7.25	9.50	15.75	11.50	2.75	.25	.25
22	1.83	2.67	7.75	10.50	15.00	11.50	2.67	.25	.25
23	1.92	8.75	8.25	11.00	14.00	11.50	2.50	.25	.25
24	1.92	12.00	8.00	12.00	13.50	10.17	2.25	.25	.25
25	1.92	7.75	7.42	12.75	13.75	10.00	2.08	.25	.25
26	1.83	6.08	7.17	12.58	14.17	10.00	2.00	.25	.25
27	1.83	5.25	8.50	11.50	14.42	9.50	2.00	.25	.25
28	1.83	5.83	9.00	12.33	14.33	9.75	1.92	.25	.25
29	1.83	.....	7.75	13.50	13.33	10.00	1.83	.25	.25
30	1.83	.....	7.50	13.75	12.33	10.50	1.75	.25	.25
31	1.83	.....	7.00	.....	11.00	.....	1.50	.25	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891–92.												
1	0.25	4.83	4.83	6.50	5.25	6.50	8.50	9.50	15.00	11.50	9.00	9.00
2	.25	4.83	4.83	7.00	5.25	6.50	8.17	9.33	16.00	10.50	8.83	8.83
3	.25	5.00	5.50	6.00	5.25	6.33	8.67	10.00	16.33	10.00	8.67	8.67
4	.25	5.17	6.00	5.50	5.25	6.25	8.33	9.00	15.00	9.50	8.50	8.50
5	.25	5.17	6.00	5.50	5.25	6.25	7.50	10.00	15.00	9.50	8.33	8.33
6	.25	5.17	5.33	5.50	5.25	6.25	7.50	10.50	14.67	9.00	8.00	8.00
7	.25	5.25	5.00	5.50	5.50	6.25	7.50	11.00	14.50	8.50	8.00	8.00
8	.25	5.25	5.00	5.50	5.50	6.17	8.50	10.50	13.50	8.00	8.00	8.00
9	.25	5.17	4.92	5.50	5.50	6.33	9.00	10.00	13.00	8.00	8.17	8.00
10	.25	5.00	5.00	5.50	5.50	6.50	9.50	9.67	12.00	8.33	8.17	8.00

Daily gage height, in feet, of Mokelumne River at Lodi, Cal., for 1891–1895—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891-92.												
11	0.25	5.83	5.17	5.50	5.50	6.67	10.50	12.67	12.00	8.00	8.00	8.00
12	.25	5.83	5.00	5.50	5.50	7.17	10.00	13.67	11.00	7.50	8.00	8.00
13	.25	6.17	4.83	5.50	5.50	7.33	9.50	12.83	10.00	8.00	8.00	8.00
14	.25	5.00	4.83	5.50	5.50	7.17	9.25	11.50	11.00	8.50	8.00	8.00
15	.25	5.17	4.83	5.50	5.50	7.50	9.17	11.83	11.00	8.33	8.00	8.00
16	.25	5.17	4.83	5.50	5.50	8.50	11.50	14.00	12.00	8.00	8.00	8.00
17	1.17	5.00	4.83	5.50	5.50	8.00	10.50	13.67	11.83	8.17	8.00	8.00
18	2.00	4.83	4.83	5.50	5.50	7.00	9.50	13.50	13.00	8.00	8.00	8.00
19	2.83	4.83	4.83	5.50	5.50	8.50	9.00	14.33	14.00	8.00	8.00	8.00
20	3.50	4.83	4.83	5.25	7.50	8.67	9.00	15.33	15.00	8.25	8.00	8.00
21	4.00	4.83	4.83	5.25	9.50	8.33	9.00	16.00	15.00	8.50	8.00	8.00
22	4.50	4.83	4.83	5.25	8.08	7.50	8.50	16.50	15.00	8.50	8.00	7.83
23	4.50	4.83	4.83	5.25	7.33	7.33	8.50	17.00	14.00	8.33	8.00	7.67
24	4.50	4.83	4.83	5.25	7.25	7.25	9.33	16.67	13.50	6.50	8.00	7.50
25	4.50	4.83	4.83	5.25	7.00	7.25	10.50	17.00	11.50	8.58	8.00	7.50
26	4.50	4.83	4.83	5.25	6.50	7.25	9.50	16.50	11.50	8.67	8.00	7.50
27	4.67	4.83	4.83	5.25	6.33	7.17	9.00	16.00	12.00	8.50	8.00	7.50
28	4.67	4.83	7.00	5.25	6.00	7.83	8.50	15.50	13.00	8.50	7.92	7.50
29	4.67	4.83	6.00	5.25	6.00	8.00	9.00	16.67	12.50	8.67	7.83	7.50
30	4.67	4.83	9.00	5.25	.....	9.00	10.50	16.50	12.00	10.00	7.83	7.50
31	4.67	.....	.....	5.25	.....	9.00	.....	15.50	.....	9.00	7.83	.....
1892-93.												
1	7.00	5.50	14.50	9.00	16.00	8.00	14.17	12.00	15.50	13.00	10.67	10.00
2	7.00	5.50	15.00	8.50	14.33	8.00	14.00	12.50	15.83	13.50	10.75	9.83
3	8.00	5.50	13.00	8.50	13.00	8.00	13.50	12.50	11.33	13.83	10.50	10.00
4	8.00	5.50	12.00	8.50	12.50	8.00	13.00	13.00	16.17	13.83	10.50	10.00
5	8.00	5.50	12.00	8.50	12.00	8.83	12.67	13.50	16.50	13.50	10.50	10.17
6	8.00	5.50	8.00	8.50	12.00	7.83	12.33	13.33	16.50	13.00	10.50	10.17
7	8.00	5.50	8.00	8.50	11.17	7.83	12.08	13.42	16.33	12.67	10.50	10.25
8	8.00	5.50	8.00	8.50	10.00	7.83	11.83	13.58	16.17	12.50	10.50	10.33
9	8.17	5.50	7.00	8.50	13.42	7.83	11.50	14.00	16.33	12.33	10.50	10.50
10	8.25	5.50	7.00	8.50	15.33	7.83	11.33	14.50	16.50	12.00	10.50	10.50
11	8.50	5.50	7.00	8.50	14.00	10.50	11.00	15.00	16.25	11.83	10.50	10.33
12	8.67	5.50	6.00	8.50	12.33	8.00	11.00	15.50	16.33	11.00	10.50	10.50
13	8.33	5.50	6.00	8.50	12.00	8.00	10.50	16.00	16.25	11.50	10.50	10.50
14	8.00	5.50	6.00	8.50	11.17	10.00	10.33	16.50	15.33	11.58	10.50	10.50
15	8.00	5.50	6.00	8.58	10.00	9.00	10.17	17.00	14.17	11.67	10.50	10.50
16	8.00	5.50	6.00	11.00	10.00	10.00	10.00	16.50	14.83	11.50	10.50	10.25
17	8.00	5.50	6.00	12.00	10.00	9.00	10.00	16.67	14.83	11.33	10.50	10.17
18	8.00	5.50	6.00	9.50	9.50	11.00	10.00	16.50	15.00	10.83	10.50	10.17
19	8.33	5.50	6.00	8.50	9.00	13.00	10.33	15.33	15.33	10.83	10.50	10.00
20	8.50	5.50	6.00	8.50	9.00	19.58	10.67	14.17	15.00	10.58	10.50	9.83
21	5.50	5.50	6.00	8.50	8.83	7.00	11.00	14.00	14.83	10.83	10.50	9.50
22	5.50	5.50	6.00	8.33	8.83	15.50	12.00	13.50	14.50	11.67	10.50	9.50
23	5.50	5.50	6.00	8.17	8.83	14.50	13.00	12.83	14.33	10.83	10.50	9.50
24	5.50	5.50	8.00	8.00	8.67	13.00	14.00	13.33	14.42	10.00	10.33	9.83
25	5.50	5.50	19.00	8.00	8.67	13.33	13.50	14.50	14.42	9.25	10.25	9.50
26	5.50	5.50	17.00	8.83	8.50	12.00	12.33	14.33	14.33	9.50	10.33	9.33
27	5.50	6.00	18.00	12.00	8.33	12.50	12.00	13.50	14.33	10.50	8.50	8.25
28	5.50	6.00	16.00	11.33	8.33	12.00	13.00	14.00	14.00	10.83	9.00	8.17
29	5.50	7.00	15.00	10.50	.....	13.00	12.50	13.83	13.50	10.17	9.33	8.17
30	5.50	12.25	12.00	10.00	.....	13.50	12.00	14.33	13.33	10.33	10.00	8.08
31	5.50	.....	11.00	10.00	.....	14.33	.....	14.58	.....	10.50	9.50	.....
1893-94.												
1	7.83	7.00	7.50	5.50	6.17	8.17	10.33	13.25	15.83	11.50	10.17	10.00
2	7.67	5.50	7.67	5.50	6.33	8.17	11.50	13.00	15.00	11.42	10.33	9.83
3	7.58	4.83	8.00	6.50	6.33	8.17	11.00	13.25	14.50	11.33	10.33	9.83
4	7.50	4.83	6.50	7.00	6.17	8.92	11.50	13.17	14.33	11.33	10.42	9.92
5	7.50	4.83	6.00	7.00	6.17	8.25	12.50	13.25	13.33	11.42	10.42	10.00
6	7.50	4.83	5.83	7.00	6.33	8.25	12.75	14.08	13.00	11.50	10.42	10.17
7	7.42	4.83	5.50	5.50	6.33	8.25	12.83	15.08	12.33	11.50	10.33	10.00
8	7.33	4.83	5.50	5.50	6.25	8.25	13.00	15.00	12.25	11.33	10.25	9.67
9	7.33	4.83	5.50	5.50	6.25	8.25	14.00	16.08	13.00	11.33	10.17	10.00
10	7.42	4.83	5.50	5.50	9.50	8.33	14.08	16.00	12.50	11.42	10.17	9.50
11	7.50	4.83	5.50	5.50	7.17	7.92	14.83	16.08	12.00	11.33	9.83	9.50
12	7.50	4.83	5.50	5.50	7.00	7.67	15.50	16.00	11.00	10.92	9.75	9.00
13	7.83	4.83	5.50	6.00	7.00	7.50	14.50	16.17	12.50	10.67	9.75	8.83
14	8.00	4.83	5.50	6.50	6.67	8.00	13.75	16.50	12.33	10.50	9.50	8.67
15	8.00	4.83	5.50	7.00	6.50	9.33	14.25	15.83	13.42	7.33	9.33	8.50

Daily gage height, in feet, of Mokelumne River at Lodi, Cal., for 1891–1895—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1893–94.												
16	7.50	4.83	5.50	12.00	6.50	9.33	14.00	14.50	13.83	9.67	9.25	8.50
17	8.00	6.83	5.50	11.00	7.00	10.00	13.50	13.33	14.33	10.50	9.25	8.33
18	8.17	7.00	5.50	8.00	9.00	11.00	12.50	14.17	14.50	10.50	9.00	8.33
19	8.17	7.33	5.50	7.50	15.00	10.00	12.75	13.33	13.83	10.50	9.25	8.25
20	8.17	7.33	5.50	7.00	16.00	9.00	13.25	13.50	13.33	10.50	9.17	8.17
21	8.17	7.00	5.50	12.00	11.00	9.00	13.83	13.25	13.17	10.50	9.00	8.00
22	8.17	6.17	5.83	9.00	9.50	8.50	14.50	12.67	12.83	10.50	8.83	7.83
23	8.17	5.83	6.00	7.50	9.00	8.33	15.00	13.50	13.25	10.50	9.00	7.83
24	8.25	5.83	6.50	7.00	8.00	8.00	14.92	14.00	13.00	10.42	9.25	7.75
25	8.25	6.00	7.00	8.00	7.67	8.33	13.92	15.83	12.50	10.50	9.50	7.75
26	8.25	7.50	7.00	7.00	8.00	9.00	14.00	15.67	12.42	10.50	9.67	7.58
27	7.83	10.50	6.00	6.33	8.17	9.50	13.92	16.00	12.17	10.17	9.58	7.75
28	7.75	8.00	5.83	6.00	8.17	10.00	13.82	15.50	12.00	10.50	9.50	7.83
29	8.00	7.83	5.83	6.00	.....	10.50	12.00	14.83	11.50	10.25	9.33	7.75
30	8.17	7.50	5.50	6.00	.....	10.83	11.83	14.50	11.33	10.33	9.67	8.25
31	8.00	.....	5.50	6.00	.....	11.00	.....	15.50	.....	10.50	9.83	.....
1894–95.												
1	8.50	5.33	5.42	7.00	7.25	10.00	10.50	14.00	13.33	12.50	3.50	1.25
2	9.00	5.25	5.42	6.50	7.25	10.00	10.67	14.83	13.50	11.83	3.33	1.25
3	9.33	5.25	5.25	6.50	7.33	10.17	10.50	15.58	13.83	11.83	3.25	1.25
4	8.50	5.42	5.25	6.50	7.42	10.25	10.33	14.50	14.17	11.75	3.25	1.25
5	6.83	5.33	5.17	12.50	7.42	10.25	10.50	14.00	15.00	11.50	3.17	1.33
6	6.75	5.17	5.33	13.00	7.42	10.17	10.25	15.50	15.50	11.00	3.17	1.33
7	6.50	5.00	6.50	7.50	7.33	10.17	10.00	16.00	15.67	12.00	3.08	1.25
8	6.50	5.17	7.00	8.00	7.17	10.00	10.00	16.50	15.50	12.00	3.00	1.25
9	6.50	5.25	7.17	8.58	7.25	10.00	10.33	16.25	15.33	11.75	2.92	1.25
10	6.67	5.25	6.50	8.75	7.25	10.00	10.50	16.33	15.17	11.33	2.75	1.25
11	6.58	5.25	6.33	8.50	7.42	10.00	10.33	16.00	15.33	11.50	2.58	1.25
12	6.50	5.25	6.00	8.00	10.50	9.83	11.00	15.83	15.25	11.17	2.42	2.50
13	6.50	5.25	6.00	9.00	16.67	9.83	11.50	16.50	15.33	11.33	2.33	6.50
14	6.67	5.25	5.83	10.75	14.83	9.75	12.33	16.67	15.00	11.00	2.25	4.00
15	7.00	5.17	5.50	9.00	13.50	9.50	12.00	17.00	15.00	10.83	2.08	3.50
16	7.33	5.17	5.33	12.17	11.00	9.00	11.83	16.50	14.50	10.67	2.08	3.00
17	8.00	5.08	5.33	12.58	10.50	8.50	11.67	17.25	13.25	10.50	2.08	2.50
18	8.00	5.08	9.00	13.83	9.50	8.50	11.75	17.42	13.42	10.50	2.00	2.50
19	8.00	5.17	9.00	11.50	9.42	8.42	11.92	17.17	13.50	9.92	1.92	2.33
20	8.00	5.17	12.50	10.33	9.50	8.50	12.50	16.50	13.42	10.00	1.67	2.17
21	5.00	5.25	9.00	9.50	9.50	8.67	14.00	15.50	14.00	8.00	1.50	2.00
22	6.00	5.17	10.00	9.50	9.67	8.50	14.50	15.33	14.42	8.00	1.50	1.92
23	6.17	5.17	11.00	10.50	10.50	8.42	14.58	15.17	14.50	11.00	1.50	1.83
24	6.33	5.25	8.50	9.25	11.67	8.33	14.50	15.00	14.58	5.42	1.50	1.67
25	6.50	5.25	8.33	8.33	10.50	8.25	14.50	15.33	14.50	4.25	1.42	1.50
26	6.33	5.17	7.50	8.33	11.00	8.25	15.00	16.00	14.17	4.00	1.33	1.42
27	6.50	5.17	7.17	8.00	10.33	8.33	15.50	17.25	14.42	4.00	1.33	1.42
28	6.50	5.17	6.50	8.17	10.00	10.50	15.67	16.00	14.33	3.83	1.25	1.50
29	5.83	5.42	6.33	7.75	.....	13.67	14.50	15.00	13.83	3.50	1.25	1.33
30	6.50	5.50	7.25	7.50	.....	13.00	13.83	13.83	13.17	3.50	1.25	1.33
31	5.33	.....	7.50	7.50	.....	11.00	.....	13.33	.....	3.50	1.25	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1895.				1895.				1895.			
1	1.25	1.08	1.75	11	0.83	1.50	1.42	21	1.50	1.50	3.50
2	1.25	1.17	1.50	12	.92	1.50	1.33	22	1.75	1.33	2.50
3	1.17	1.25	1.33	13	.92	1.58	1.17	23	1.83	1.33	2.00
4	1.17	1.25	1.33	14	.92	1.50	1.25	24	1.83	1.17	2.00
5	1.17	1.33	1.25	15	.92	1.50	1.42	25	1.58	1.17	1.83
6	1.17	1.33	1.25	16	.92	1.58	1.58	26	1.92	1.00	1.67
7	1.08	1.33	1.17	17	.92	1.58	1.92	27	1.17	1.00	1.50
8	1.08	1.33	1.17	18	1.00	1.50	1.83	28	1.08	1.00	1.50
9	1.00	1.33	1.25	19	1.08	1.50	1.75	29	1.00	1.17	1.42
10	1.00	1.33	1.42	20	1.17	1.42	2.00	30	1.00	1.50	1.33
								31	1.00	.....	1.33

MIDDLE FORK OF MOKELUMNE RIVER AT WEST POINT, CAL.

This station, which is located above the bridge on the West Point-Mokelumne Hill road, in sec. 10, T. 6 N., R. 13 E., 3½ miles above the junction with South Fork, 1¼ miles below the mouth of Bear Creek, and 1 mile south of West Point, was established October 9, 1911.

The gage is a vertical staff in two sections, located on the right bank 1,000 feet above the bridge.

Discharge measurements are made from a car and cable half a mile above the gage or by wading.

The channel is composed of gravel and bowlders.

The Mokelumne Hill and Valley Springs ditch, which has a capacity of 6 second-feet, diverts water about 2 miles above the station.

Discharge measurements of Middle Fork of Mokelumne River at West Point, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-ft.*
Oct. 9	F. C. Ebert	3.10	16
Nov. 24	do	3.00	12
1912.			
Feb. 1	J. E. Stewart	3.38	30
Mar. 13	do	3.70	59
May 9	do	3.98	85
11	do	3.92	76

Daily gage height, in feet, of Middle Fork of Mokelumne River at West Point, Cal., for 1911–12.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1	.....	2.99	2.95	3.28	3.40	3.18	3.38	4.20	3.75
2	.....	2.99	2.95	3.40	3.32	3.30	3.40	4.10	3.71
3	.....	2.92	2.95	3.10	3.30	3.20	3.40	.....	3.62
4	.....	2.95	2.95	3.30	3.30	3.30	3.45	.....	3.60
5	.....	2.93	2.95	3.70	3.30	3.50	3.40	4.00	3.55
6	.....	2.92	3.00	3.30	3.30	4.55	3.40	3.90	3.50
7	.....	2.94	3.00	3.40	3.29	4.00	3.40	3.91	3.45
8	.....	2.95	2.98	3.30	3.29	3.80	3.40	3.95	3.40
9	3.10	3.60	2.98	3.30	3.25	3.79	3.45	3.99	3.40
10	3.08	3.12	2.99	3.90	3.20	3.60	3.65	3.92	3.38
11	3.04	3.06	2.99	3.50	3.23	3.65	3.55	3.90	3.41
12	3.04	3.04	2.99	3.40	3.20	3.70	3.51	3.85	3.40
13	3.00	3.03	3.00	3.31	3.25	3.70	3.49	3.85	3.35
14	3.00	3.01	3.00	3.30	3.23	3.60	3.49	3.81	3.30
15	3.00	3.01	3.00	3.30	3.23	3.80	3.50	3.80	3.28
16	2.99	3.01	3.00	3.50	3.20	3.75	3.51	3.80	3.20
17	2.99	3.01	3.06	3.40	3.20	3.70	3.51	3.79	3.15
18	2.99	3.01	3.01	3.42	3.20	3.60	3.51	3.78	3.15
19	2.98	3.00	3.01	3.40	3.21	3.60	3.50	3.75	3.10
20	2.95	3.00	3.10	3.35	3.20	3.55	3.51	4.10	3.12
21	2.93	3.00	3.10	3.35	3.20	3.55	3.51	3.89	3.10
22	2.95	3.00	3.10	3.30	3.20	3.50	3.40	3.79	3.15
23	3.01	3.00	3.10	3.30	3.20	3.49	3.42	3.81	3.12
24	.....	3.00	3.07	3.29	3.18	3.49	3.50	3.85	3.08
25	.....	2.99	3.34	3.29	3.18	3.49	3.49	3.89	3.05
26	.....	3.00	3.34	4.10	3.15	3.49	3.68	4.35	3.03
27	.....	2.95	3.28	3.59	3.15	3.49	3.60	4.22	3.01
28	.....	2.95	3.28	3.50	3.15	3.48	3.60	4.02	3.00
29	.....	2.95	3.28	3.48	3.15	3.48	4.20	4.00	3.02
30	3.00	2.95	3.28	3.40	.....	3.40	4.00	3.90	3.01
31	2.99	.....	3.30	3.40	.....	3.40	.....	3.80	.....

Daily discharge, in second-feet, of Middle Fork of Mokelumne River at West Point, Cal., for 1911–12.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1	.....	12	10	24	31	19	30	113	60
2	.....	12	10	31	26	25	31	99	56
3	.....	9	10	16	25	20	34	95	48
4	.....	10	10	25	25	25	34	91	46
5	.....	10	10	55	25	38	31	87	42
6	.....	9	12	25	25	168	31	75	38
7	.....	10	12	31	25	87	31	76	34
8	.....	10	11	25	25	65	31	81	31
9	16	46	11	25	22	64	34	86	31
10	15	17	12	75	20	46	50	77	30
11	14	14	12	38	22	50	42	75	32
12	14	14	12	31	20	55	39	70	31
13	12	13	12	26	22	55	37	70	28
14	12	12	12	25	22	46	37	66	25
15	12	12	12	25	22	65	38	65	24
16	12	12	12	38	20	60	39	65	20
17	12	12	18	31	20	55	39	64	18
18	12	12	12	32	20	46	39	63	18
19	11	12	12	31	20	46	38	60	16
20	10	12	16	28	20	42	39	99	17
21	10	12	16	28	20	42	39	74	16
22	10	12	16	25	20	38	31	64	18
23	12	12	16	25	20	37	32	66	17
24	12	12	15	25	19	37	38	70	15
25	12	12	27	25	19	37	37	74	14
26	12	12	27	99	18	37	53	135	13
27	12	10	24	45	18	37	46	113	12
28	12	10	24	38	18	37	46	87	12
29	12	10	24	37	18	37	113	87	13
30	12	10	24	31	.....	31	87	75	12
31	12	.....	25	31	.....	31	.....	65	.....

NOTE.—Daily discharge determined from a well-defined rating curve. Discharge interpolated Oct. 24–29, 1911, and May 3–4, 1912.

Monthly discharge of Middle Fork of Mokelumne River at Westpoint, Cal., for 1911–12.

Month.	Discharge in second-feet.			Run-off (in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October 9–31	16	10	12.2	557	B.
November	46	9	12.7	756	B.
December	27	10	15.4	947	B.
January	99	16	33.7	2,070	A.
February	31	18	21.6	1,240	A.
March	168	19	47.7	2,930	A.
April	113	30	41.5	2,470	A.
May	135	60	80.2	4,930	A.
June	60	12	26.2	1,560	A.
The period	.....	.....	.....	17,500	

SOUTH FORK OF MOKELUMNE RIVER NEAR RAILROAD FLAT, CAL.

This station, which is located at Laidet's ranch, in sec. 34, T. 6 N., R. 14 E., about 5 miles above the mouth of Licking Fork and 5 miles east of Railroad Flat, was established October 23, 1911.

The gage is a vertical staff fastened to an alder tree on the right bank, 100 feet above the suspension footbridge.

The channel is composed of gravel.

An irrigation and power ditch having a capacity of 2 second-feet diverts water at the base of Blue Mountain above the station. Some water is also used for irrigation at Laidet's ranch.

The gage-height record is furnished by the United States Forest Service.

Discharge measurements of South Fork of Mokelumne River near Railroad Flat, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-feet.*
Oct. 23	H. J. Tompkins	1.18	7.6
Nov. 28	Lasley Lee	1.19	7.4
1912.			
Feb. 2	J. E. Stewart	1.29	13
Mar. 4	do	1.43	24
May 10	do	1.86	71

Daily gage height, in feet, of South Fork of Mokelumne River near Railroad Flat, Cal., for 1911–12.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1					1.32	1.20	1.50	1.88	1.67
2				1.30	1.30	1.30	1.50	1.88	1.61
3		1.20	1.18	1.42	1.30	1.25	1.50	1.86	1.60
4				1.40	1.28	1.33	1.48	1.80	1.57
5				1.40	1.28	1.51	1.49	1.80	1.55
6				1.38	1.26	1.90	1.49	1.82	1.52
7			1.18	1.40	1.25	1.65	1.49	1.85	1.50
8				1.32	1.24	1.55	1.50	1.88	1.50
9				1.31	1.25	1.50	1.50	1.88	1.48
10		1.55	1.18	1.54	1.26	1.46	1.58	1.85	1.46
11				1.50	1.26	1.41	1.54	1.86	1.43
12		1.20		1.38	1.26	1.47	1.50	1.84	1.41
13				1.31	1.26	1.50	1.46	1.84	1.44
14		1.20		1.29	1.25	1.44	1.48	1.82	1.44
15			1.18	1.31	1.26	1.48	1.50	1.80	1.42
16				1.43	1.24	1.48	1.54	1.78	1.40
17				1.31	1.24	1.50	1.54	1.76	1.38
18		1.10		1.30	1.26	1.48	1.55	1.74	1.32
19				1.34	1.26	1.48	1.55	1.70	1.34
20				1.30	1.26	1.54	1.51	1.80	1.34
21				1.29	1.26	1.51	1.50	1.75	1.34
22				1.28	1.25	1.50	1.49	1.72	1.34
23	1.18	1.18		1.26	1.24	1.51	1.51	1.71	1.36
24				1.26	1.24	1.51	1.54	1.72	1.32
25				1.27	1.22	1.52	1.58	1.75	1.31
26		1.18		1.66	1.21	1.53	1.60	2.05	1.30
27				1.50	1.24	1.48	1.58	1.89	1.29
28		1.19		1.38	1.22	1.46	1.60	1.82	1.29
29			1.20	1.36	1.20	1.49	1.85	1.75	1.27
30		1.18		1.32		1.46	1.85	1.74	1.27
31				1.30		1.46		1.68	

Daily discharge, in second-feet, of South Fork of Mokelumne River near Railroad Flat, Cal., for 1911–12.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1		8	7.2	12	15	8	30	73	48
2		8	7.2	14	14	14	30	73	41
3		8	7.2	23	14	11	30	71	40
4		8	7.2	21	13	16	28	63	37
5		8	7.2	21	13	31	29	63	35
6		8	7.2	20	12	76	29	66	32
7		8	7.2	21	11	46	29	70	30
8		8	7.2	15	10	35	30	73	30
9		40	7.2	15	11	30	30	73	28
10		35	7.2	34	12	26	38	70	26
11		15	7.2	30	12	22	34	71	24
12		8	7.2	20	12	27	30	68	22
13		8	7.2	15	12	30	26	68	25
14		8	7.2	13	11	25	28	66	25
15		7	7.2	15	12	28	30	63	23
16		6	8	24	10	28	34	61	21
17		5	12	15	10	30	34	58	20
18		4	8	14	12	28	35	56	15
19		5	8	17	12	28	35	56	17
20		6	10	14	12	34	31	63	17
21		6	10	13	12	31	30	57	17
22		7	10	13	11	30	29	51	17
23	7.2	7.2	9	12	10	31	31	52	18
24	7	7.2	9	12	10	31	34	53	15
25	7	7.2	13	12	9.2	32	38	57	15
26	7	7.2	16	47	8.6	33	40	98	14
27	7	7.4	12	30	10	28	38	75	13
28	8	7.6	10	20	9.2	26	40	66	13
29	8	7.4	8	18	8	29	70	57	12
30	8	7.2	8	15	.....	26	70	56	12
31	8	.....	10	14	.....	26	.....	49	.....

NOTE.—Daily discharge determined from a well-defined rating curve. Discharge estimated for days on which gage was not read during Oct. 23 to Nov. 12, 1911, and Dec. 15, 1911, to Jan. 2, 1912, from discharge of Middle Fork of Mokelumne River. Discharge interpolated for days on which gage was not read from Nov. 12 to Dec. 15, 1911.

Monthly discharge of South Fork of Mokelumne River near Railroad Flat, Cal., for 1911–12.

Month.	Discharge in second-feet.			Run-off (in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October 23–31	8	7	7.47	133	D.
November	[a] 40	4	9.41	560	C.
December	[a] 16	7.2	8.68	534	D.
January	47	12	18.7	1,150	A.
February	15	8	11.3	650	A.
March	76	8	28.9	1,780	A.
April	70	26	34.7	2,060	A.
May	98	49	64.4	3,960	A.
June	48	12	23.4	1,390	A.
The period				12,200	

[a] Estimated.

LICKING FORK OF MOKELUMNE RIVER NEAR RAILROAD FLAT, CAL.

This station, which is located at the forest ranger's station in the E. ½ SE. ¼ sec. 26, T. 6 N., R. 14 E., 300 feet below the mouth of Big Canyon Creek and 8 miles east of Railroad Flat, was established October 23, 1911.

The gage is a vertical staff located on the left bank 300 feet above the ranger's camp.

Discharge measurements are made from a foot log near the gage or by wading.

The channel is composed of bowlders and gravel.

An irrigation ditch having a capacity of 1 second-foot diverst water above the station. A small amount of water, diverted from Middle Fork, enters Licking Fork above the station.

The gage-height record is furnished by the United States Forest Service.

Discharge measurements of Licking Fork of Mokelumne River near Railroad Flat, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-feet.*
Oct. 23	H. J. Tompkins	0.50	1.6
Nov. 29	Lasley Lee	.55	1.7
1912.			
Feb. 2	J. E. Stewart	.63	3.7
Mar. 14	.....do	.69	5.0
May 10	.....do	.89	10.0

Daily gage height, in feet, of Licking Fork of Mokelumne River near Railroad Flat, Cal., for 1911–12.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
1	.....	.....	0.57	0.60	.....	0.58	0.71	16	.....	0.60	.....	0.70	.....	.....	0.77
2	.....	.....	.57	.60	.....	.61	.73	17	.....	.58	.....	.65	.....	.....	.80
3	.....	0.50	.57	.63	0.60	.65	.75	18	.....	.56	.....	.60	.....	.....	.81
4	.....	.52	.57	.63	.60	.75	.76	19	.....	.....	.....	.....	.....	.....	.80
5	.....	.52	.57	.....	.60	.....	.76	20	.....	.55	.....	.....	.....	.....	.80
6	.....	.52	.57	.65	.60	.....	.76	21	.....	.55	.....	.61	0.60	.....	.79
7	.....	.52	.57	.65	.60	.....	.76	22	.....	.55	.....	.60	.60	.....	.79
8	.....	.52	.57	.63	.60	.78	.75	23	0.50	.55	.....	.62	.58	.....	.75
9	.....	.53	.57	.67	.60	.70	.75	24	.50	.55	.....	.62	.57	.....	.80
10	.....	.80	.57	.79	.60	.70	.75	25	.49	.55	.....	.62	.55	.....	.80
11	.....	.60	.57	.71	.60	.66	.73	26	.....	.55	.....	.85	.55	.....	.81
12	.....	.56	.57	.69	.60	.67	.71	27	.....	.57	.....	.70	.55	.....	.....
13	.....	.....	.57	.65	.60	.68	.71	28	.....	.57	.....	.66	.55	.....	.....
14	.....	.....	.57	.....	.....	.69	.72	29	.....	.57	.....	.65	.55	.....	.94
15	.....	.57	.....	.75	.....	.69	.73	30	.....	.57	0.60	.63	.....	0.71	.....
								31	.....	.....	.60	.63	.....	.71	.....

Daily discharge, in second-feet, of Licking Fork of Mokelumne River near Railroad Flat, Cal., for 1911–12.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
1	.....	1.5	2.3	2.8	3.2	2.5	5.0	16	.....	2.8	2.3	4.7	2.8	5	6.5
2	.....	1.5	2.3	2.8	3.0	3.0	5.4	17	.....	2.5	4	3.7	2.8	5	7.3
3	.....	1.5	2.3	3.4	2.8	3.7	5.9	18	.....	2.2	3	2.8	2.8	5	7.6
4	.....	1.7	2.3	3.4	2.8	5.9	6.2	19	.....	2.1	2	2.9	2.8	5	7.3
5	.....	1.7	2.3	3.6	2.8	7	6.2	20	.....	2.0	3	2.9	2.8	6	7.3
6	.....	1.7	2.3	3.7	2.8	13	6.2	21	.....	2.0	3	3.0	2.8	5.5	7.0
7	.....	1.7	2.3	3.7	2.8	9	6.2	22	.....	2.0	3	2.8	2.8	5.5	7.0
8	.....	1.7	2.3	3.4	2.8	6.7	5.9	23	1.5	2.0	4	3.2	2.5	5	5.9
9	.....	1.8	2.3	4.1	2.8	4.7	5.9	24	1.5	2.0	3	3.2	2.3	5	7.3
10	.....	7.3	2.3	7.0	2.8	4.7	5.9	25	1.4	2.0	5	3.2	2.0	5	7.3
11	.....	2.8	2.3	5.0	2.8	3.9	5.4	26	1.4	2.0	6	8.8	2.0	5	7.6
12	.....	2.2	2.3	4.5	2.8	4.1	5.0	27	1.4	2.3	4	4.7	2.0	5	7
13	.....	2.2	2.3	3.7	2.8	4.3	5.0	28	1.4	2.3	3	3.9	2.0	5	7
14	.....	2.3	2.3	3.5	2.8	4.5	5.2	29	1.4	2.3	3	3.7	2.0	5	12
15	.....	2.3	2.3	5.9	2.8	4.5	5.4	30	1.5	2.3	2.8	3.4	.....	5.0	12
								31	1.5	.....	2.8	3.4	.....	5.0	.....

NOTE.—Daily discharge determined from a well-defined rating curve.
Discharge estimated from run-off of adjacent streams Dec. 15–29, 1911; Jan. 14, Mar. 5–7, 16–29, and Apr. 27, 28, and 30, 1912. Discharge interpolated for all other days of missing gage heights.

Monthly discharge of Licking Fork of Mokelumne River near Railroad Flat, Cal., for 1911–12.

Month.	Discharge in second-feet.			Run-off (total in acre feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October 23–31	1.5	1.4	1.44	26	D.
November	7.3	1.5	2.22	132	C.
December	a 6	a 2	2.85	175	D.
January	8.8	2.8	3.90	240	C.
February	3.2	2.0	2.66	153	C.
March	a 13	2.5	5.27	324	C.
April	a 12	5.0	6.70	399	C.
The period				1,450	

a Estimated.

DRY CREEK NEAR IONE, CAL.

This station, which is located at the private bridge at Landis's ranch house, in the southwestern part of the Arroyo Seco grant, 2½ miles below the mouth of Jackson Creek and 7 miles southwest of Ione, was established October 7, 1911.

The gage is a vertical staff in two sections. The low-water section is fastened to the bridge pier near the right bank. The upper section is fastened to a tree 300 feet directly back of the low-water section.

The channel is composed of sand and will shift during high water.

There are small diversions for local irrigation and mining above the station. There is also a small diversion from the North Fork of Mokelumne River into this drainage basin.

Discharge measurements of Dry Creek near Ione, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-feet.*
Oct. 7	F. C. Ebert	1.67	a 0.2
1912.			
Jan. 31	J. E. Stewart	2.47	58
Mar. 12	....do	2.69	82
May 12	....do	2.20	26

a Estimated.

Daily gage height, in feet, of Dry Creek near Ione, Cal., for 1911–12.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1		2.0	2.0	2.7	2.5	2.0	2.2	2.4	2.0
2		1.9	2.0	2.5	2.5	2.0	2.2	2.4	1.8
3		1.9	2.0	2.5	2.4	2.0	2.2	2.4	1.6
4		1.9	2.0	2.3	2.4	2.0	2.1	2.4	1.4
5		1.9	2.0	2.3	2.3	2.0	2.1	2.3	1.2
6		1.8	2.0	2.2	2.3	6.0	2.1	2.3	.8
7	1.5	1.8	2.0	2.2	2.2	4.5	2.0	2.3	.6
8	1.7	1.9	2.0	2.3	2.1	4.0	2.0	2.2	.6
9	1.6	1.9	2.0	2.4	2.0	3.5	2.0	2.2	1.2
10	1.8	2.5	2.0	2.7	2.0	3.3	2.8	2.2	1.2

Daily gage height, in feet, of Dry Creek near Ione, Cal., for 1911–12—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
11	1.8	2.7	2.0	3.2	2.0	3.0	3.5	2.2	0.8
12	1.8	2.2	2.0	2.6	2.0	2.7	3.3	2.2	.8
13	1.8	2.3	2.0	2.4	2.0	4.0	3.0	2.2	.6
14	1.8	2.1	2.0	2.1	2.0	3.5	2.8	2.2	.....
15	1.8	2.0	2.0	2.1	2.0	3.5	2.8	2.2	.....
16	1.8	2.0	2.0	2.5	2.0	4.0	2.8	2.2	.....
17	1.8	2.0	2.2	2.4	2.0	3.4	2.8	2.1	.....
18	1.8	2.0	2.2	3.3	2.0	3.0	2.6	2.1	.....
19	1.8	2.1	2.1	2.6	2.0	2.8	2.5	2.0	.....
20	1.8	2.1	2.1	2.5	2.0	2.8	2.5	2.0	.....
21	1.8	2.1	2.1	2.5	2.0	2.6	2.5	2.5	.....
22	1.7	2.1	2.0	2.4	2.0	2.6	2.5	2.2	.....
23	1.7	2.0	2.0	2.4	2.0	2.4	2.5	2.1	.....
24	1.8	2.0	2.0	2.4	2.0	2.3	2.5	2.1	.....
25	1.8	2.0	2.0	2.4	2.0	2.2	2.5	2.3	.....
26	1.8	2.0	2.0	2.9	2.0	2.1	2.5	3.5	.....
27	1.8	2.0	2.0	5.0	2.0	2.1	2.5	2.6	.....
28	1.8	2.0	2.6	3.4	2.0	2.1	2.5	2.5	.....
29	1.9	2.0	2.4	3.0	2.0	2.1	2.5	2.3	.....
30	2.6	2.0	2.2	2.6	.....	2.0	2.5	2.2	.....
31	1.9	.....	2.2	2.5	.....	.....	.....	2.1	.....

NOTE.—Creek was dry July 10 to Oct. 6, 1911. Water standing in pools June 16 to 21, 1912, and dry June 22–30, 1912.

DRY CREEK AT BASE OF FOOTHILLS, SAN JOAQUIN COUNTY, CAL.

The following data, collected by the State Engineering Department of California, have been taken from "Physical data and statistics of California," by Wm. Ham. Hall.

Monthly discharge of Dry Creek at base of foothills, San Joaquin County, Cal., for 1878–1884.[a]

[Drainage area, 283 square miles.]

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.				
November	0	0.0	0.0	0
December	0	.0	.0	0
January	84	.30	.35	5,165
February	425	1.50	1.56	23,603
March	849	3.00	3.46	52,203
April	425	1.50	1.67	25,289
May	113	.40	.46	6,948
June	57	.20	.22	3,392
July	15	.05	.06	922
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	164	.580	7.78	118,000
1879–80.				
November	0	.0	.0	0
December	198	.70	.81	12,175
January	127	.45	.52	7,809
February	140	.49	.53	8,053
March	354	1.25	1.44	21,767
April	2,264	8.00	8.93	134,717

[a] The entire record is estimated from the run-off of neighboring streams.

Monthly discharge of Dry Creek at base of foothills, San Joaquin County, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1879–80.				
May	879	3.11	3.59	54,048
June	113	.40	.45	6,724
July	15	.05	.06	922
August	6	.02	.02	369
September	0	.0	.0	0
October	0	.0	.0	0
The year	341	1.21	16.35	247,000
1880–81.				
November	0	.0	.0	0
December	142	0.50	.58	8,731
January	879	3.11	3.58	54,048
February	1,557	5.50	5.73	86,471
March	566	2.00	2.31	34,802
April	566	2.00	2.23	33,679
May	113	.40	.46	6,948
June	42	.15	.17	2,499
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	322	1.14	15.06	227,000
1881–82.				
November	57	.20	.22	3,392
December	254	.90	1.04	15,618
January	254	.90	1.04	15,618
February	283	1.00	1.04	15,717
March	849	3.00	3.46	52,203
April	566	2.00	2.23	33,679
May	57	.20	.23	3,505
June	0	.0	.0	0
July	0	.0	.0	0
August	0	.0	.0	0
September	15	.05	.06	893
October	57	.20	.23	3,505
The year	199	.704	9.55	144,000
1882–83.				
November	84	.30	.33	4,998
December	84	.30	.35	5,165
January	168	.59	.68	10,330
February	141	.50	.52	7,831
March	254	.90	1.04	15,618
April	283	1.00	1.12	16,840
May	168	.59	.68	10,330
June	0	.0	.0	0
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	15	.05	.06	922
The year	99.8	.353	4.78	72,000
1883–84.				
November	0	.0	.0	0
December	15	.05	.06	922
January	142	.50	.58	8,731
February	1,132	4.00	4.31	65,113
March	1,132	4.00	4.61	69,604
April	879	3.11	3.47	52,304
May	168	.59	.68	10,330
June	283	1.00	1.12	16,840
July	0	.0	.0	0
August	0	.0	.0	0
September	0	.0	.0	0
October	0	.0	.0	0
The year	311	1.10	14.83	224,000

COSUMNES RIVER AT MICHIGAN BAR, CAL.

Cosumnes River rises on the western slope of the Sierra at an altitude of 7,700 feet, and flows southwestward to its junction with the Mokelumne, about 6 miles east of Walnut Grove. Its total length is about 90 miles. The main stream is formed by the confluence of its three forks, about 45 miles above its mouth and 20 miles above the valley border.

The gaging station, which is located at the Michigan Bar bridge, 5½ miles southwest of Latrobe and not far from the Michigan Bar post office, in the NW. ¼ SE. ¼ sec. 36, T. 8 N., R. 8 E., was established October 29, 1907.

No tributaries enter below the station. Big Canyon Creek joins the main stream from the north about 6 miles above Michigan Bar, and the junction of the three forks is 12 miles above.

Some water is diverted from the south side of the stream above the station and used for hydraulic mining near Michigan Bar. It is probable that all acquired water rights are for mining operations.

The gage, the datum of which has not been changed since the station was established, is a vertical staff on the middle pier of the bridge.

Discharge measurements are made from the bridge or by wading.

The river bed is composed of sand and gravel and is subject to slight changes. At low stages the current is sluggish at the bridge. Very satisfactory measurements may be made at medium and high stages. No measurements have been made on the diversion ditch.

Results at this station are considered good.

Discharge measurements of Cosumnes River at Michigan Bar, Cal., in 1907–1912.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1907.		*Feet.*	*Sec.-ft.*	1910.		*Feet.*	*Sec.-ft.*
Apr. 16	W. G. Steward	6.00	2,830	Jan. 18	J. E. Stewart	4.66	1,220
May 10	do	4.83	1,230	Mar. 11	do	4.82	1,410
Sept. 18	W. A. Lamb	3.13	41	25	do	5.64	2,820
Oct. 9	do	3.18	58	May 24	do	3.65	270
1908.				July 2	do	2.90	45
Jan. 25	W. A. Lamb	4.55	886	13	do	2.71	26
Feb. 15	do	3.90	229	Aug. 6	W. V. Hardy	2.53	10
Apr. 10	do	3.90	294	Oct. 26	J. E. Stewart	2.68	18
Sept. 18	W. V. Hardy	2.55	*a* 1	1911.			
Dec. 14	W. F. Martin	3.08	57	Jan. 14	H. D. McGlashan	7.65	8,740
1909.				Feb. 1	do	7.95	9,830
Jan. 23	W. F. Martin	6.68	5,570	Mar. 31	J. E. Stewart	5.50	2,570
Feb. 13	do	7.15	7,450	Aug. 10	F. C. Ebert	2.55	39
May 21	do	4.25	639	Oct. 2	J. E. Stewart	2.55	40
July 24	W. V. Hardy	2.70	24	1912.			
Sept. 3	do	2.50	6.6	July 11	Lasley Lee	2.50	35
Nov. 10	do	3.70	195				

a Estimated.

Daily gage height, in feet, of Cosumnes River at Michigan Bar, Cal., for 1907–1912.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907–8.												
1	.....	3.3	3.25	4.05	3.9	4.25	4.0	3.9	3.8	3.1	2.4	2.5
2	.....	3.3	3.25	3.85	4.0	4.5	4.0	3.95	3.75	3.05	2.4	2.5
3	.....	3.3	3.25	3.75	4.25	4.5	4.0	4.0	3.75	3.0	2.4	2.5
4	.....	3.3	3.25	4.05	4.1	4.35	4.0	3.9	3.7	3.0	2.35	2.5
5	.....	3.3	3.2	3.85	4.0	4.2	4.0	3.9	3.7	3.0	2.35	2.5
6	.....	3.3	3.35	3.7	4.0	4.15	4.0	3.9	3.6	3.0	2.3	2.5
7	.....	3.3	3.75	3.7	3.9	4.1	3.95	3.85	3.6	3.0	2.25	2.5
8	.....	3.25	3.95	3.6	3.9	4.1	4.0	3.9	3.6	2.9	2.25	2.5
9	.....	3.3	3.75	3.6	4.2	4.0	3.9	3.9	3.6	2.9	2.25	2.5
10	.....	3.25	3.55	3.6	4.1	4.0	3.9	3.9	3.5	2.8	2.4	2.5
11	.....	3.2	4.15	3.6	4.0	4.05	3.95	3.95	3.5	2.8	2.4	2.5
12	.....	3.25	3.8	3.6	4.0	4.1	4.0	4.0	3.5	2.8	2.4	2.5
13	.....	3.25	3.7	3.6	3.9	4.1	4.0	4.0	3.5	2.8	2.4	2.5
14	.....	3.25	3.7	4.3	3.9	4.2	4.05	4.0	3.4	2.75	2.4	2.5
15	.....	3.25	3.6	4.05	3.9	4.25	4.05	4.3	3.4	2.7	2.4	2.5
16	.....	3.2	3.6	3.85	3.9	4.35	4.0	4.15	3.4	2.7	2.4	2.5
17	.....	3.2	3.6	3.8	3.85	4.4	4.0	4.05	3.3	2.65	2.4	2.55
18	.....	3.2	3.5	3.8	3.85	4.4	4.0	4.05	3.35	2.65	2.4	2.55
19	.....	3.2	3.4	3.8	3.8	4.35	4.0	4.2	3.3	2.65	2.45	2.55
20	3.2	3.3	3.6	4.1	3.8	4.3	4.0	4.15	3.3	2.6	2.45	2.55
21	3.2	3.3	3.6	5.3	3.8	4.3	4.0	4.1	3.3	2.6	2.45	2.6
22	3.2	3.3	3.6	4.7	3.7	4.3	4.0	4.1	3.35	2.6	2.45	2.6
23	3.2	3.7	3.6	4.4	3.7	4.25	4.05	4.1	3.3	2.6	2.45	2.6
24	3.2	3.3	3.5	5.15	3.7	4.2	4.0	4.0	3.3	2.55	2.48	2.6
25	3.3	3.3	3.45	4.5	3.7	4.25	4.0	4.0	3.2	2.5	2.5	2.6
26	3.4	3.3	3.5	4.35	3.7	4.25	3.95	4.0	3.2	2.5	2.5	2.6
27	3.4	3.25	4.15	4.2	3.7	4.15	3.9	3.9	3.2	2.5	2.5	2.6
28	3.45	3.25	4.05	4.1	3.8	4.05	3.9	3.9	3.15	2.5	2.5	2.6
29	3.4	3.25	3.95	4.0	4.2	3.95	3.9	3.9	3.1	2.5	2.5	2.55
30	3.3	3.2	3.8	4.0	.....	4.0	3.9	3.85	3.1	2.45	2.5	2.55
31	3.3	.....	4.4	3.9	.....	4.0	.....	3.85	.....	2.4	2.5	.....
1908–9.												
1	2.55	2.75	3.0	3.15	4.7	4.55	4.5	4.55	4.1	3.3	2.6	2.5
2	2.5	2.75	3.0	3.35	4.45	4.55	4.45	4.55	4.15	3.3	2.6	2.5
3	2.5	2.75	3.0	3.6	5.3	4.8	4.55	4.6	4.2	3.3	2.6	2.5
4	2.5	2.75	3.05	3.6	5.1	5.7	4.6	4.55	4.15	3.2	2.6	2.5
5	2.5	2.75	3.4	3.6	5.2	5.4	4.65	4.6	4.1	3.2	2.6	2.55
6	2.5	2.75	3.6	4.25	5.0	5.6	4.6	4.6	4.1	3.2	2.6	2.6
7	2.5	2.75	3.3	4.25	6.2	5.4	4.6	4.5	4.0	3.2	2.6	2.6
8	2.5	2.75	3.3	5.1	5.35	5.25	4.6	4.45	4.0	3.2	2.6	2.6
9	2.5	2.75	3.2	5.95	5.0	5.1	4.6	4.5	3.95	3.1	2.6	2.5
10	2.55	2.75	3.15	4.6	4.8	4.9	4.7	4.4	3.9	3.1	2.6	2.6
11	2.55	2.75	3.1	4.15	6.5	4.85	4.7	4.35	3.95	3.1	2.6	2.55
12	2.5	2.75	3.1	4.05	8.1	4.8	4.7	4.2	3.9	3.05	2.55	2.5
13	2.5	2.75	3.0	7.2	7.15	4.7	4.7	4.15	3.8	3.0	2.5	2.5
14	2.5	2.75	3.1	10.5	6.2	4.7	4.8	4.1	3.8	3.0	2.5	2.5
15	2.6	2.8	3.1	7.75	5.75	4.6	4.9	4.1	3.7	3.0	2.5	2.5
16	3.1	2.8	3.15	7.5	5.55	4.6	4.95	4.1	3.7	2.9	2.5	2.5
17	3.25	2.75	3.1	7.4	5.6	4.65	5.05	4.0	3.7	2.9	2.5	2.5
18	3.1	2.8	3.1	7.3	5.65	4.65	5.05	4.1	3.8	2.9	2.5	2.5
19	3.0	2.8	3.0	7.3	5.5	4.6	5.05	4.0	3.7	2.8	2.5	2.5
20	2.9	2.8	3.0	7.3	5.55	4.65	5.0	4.0	3.65	2.8	2.5	2.5
21	2.85	2.7	3.05	9.3	5.4	4.7	4.9	4.1	3.65	2.8	2.5	2.55
22	2.8	2.8	3.1	7.6	5.2	4.6	4.75	4.2	3.6	2.8	2.5	2.55
23	2.8	3.3	3.05	6.65	5.0	4.5	4.65	4.1	3.55	2.7	2.5	2.55
24	2.8	3.45	3.1	5.75	5.0	4.5	4.65	4.1	3.5	2.7	2.55	2.6
25	2.8	3.3	3.1	5.65	4.9	4.4	4.55	4.1	3.5	2.7	2.55	2.65
26	2.75	3.2	3.05	5.4	4.8	4.5	4.6	4.1	3.5	2.7	2.6	2.7
27	2.75	3.1	3.0	5.3	4.7	4.4	4.7	4.1	3.5	2.7	2.6	2.7
28	2.75	3.0	3.0	5.05	4.6	4.35	4.6	4.1	3.4	2.7	2.5	2.6
29	2.75	3.0	3.0	4.9	.....	4.8	4.6	4.1	3.4	2.65	2.5	2.6
30	2.75	3.0	3.0	5.0	.....	4.7	4.55	4.05	3.35	2.65	2.5	2.6
31	2.75	.....	3.0	4.8	.....	4.55	.....	4.05	.....	2.6	2.5	.....
1909–10.												
1	2.7	3.05	5.05	6.1	4.5	4.7	4.8	4.3	3.4	2.9	2.5	2.3
2	2.7	2.95	5.7	5.1	4.5	4.7	4.8	4.2	3.4	2.9	2.5	2.3
3	2.7	2.9	4.8	4.75	4.4	4.8	4.8	4.2	3.4	2.8	2.5	2.3
4	2.9	2.95	4.65	4.55	4.4	4.8	4.75	4.2	3.35	2.85	2.5	2.3
5	2.9	2.9	4.6	4.4	4.3	4.9	4.7	4.1	3.3	2.85	2.5	2.3

Daily gage height, in feet, of Cosumnes River at Michigan Bar, Cal., for 1907–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
6	2.9	2.9	4.4	4.4	4.2	4.85	4.7	4.1	3.3	2.85	2.5	2.35
7	2.8	2.9	4.7	4.3	4.6	4.8	4.7	4.0	3.3	2.8	2.5	2.3
8	2.8	3.0	4.4	4.2	4.55	4.8	4.7	4.0	3.3	2.8	2.5	2.3
9	2.8	3.2	7.1	4.25	4.45	4.8	4.7	4.05	3.25	2.8	2.4	2.3
10	2.7	3.7	5.55	4.2	4.4	4.8	4.7	4.05	3.2	2.75	2.4	2.3
11	2.7	3.7	4.95	4.1	4.3	4.8	4.9	4.0	3.2	2.7	2.4	2.3
12	2.7	3.5	4.65	4.1	4.3	4.8	4.75	4.0	3.2	2.7	2.4	2.4
13	2.7	3.35	4.55	4.0	4.3	4.8	4.7	4.0	3.2	2.7	2.4	2.4
14	2.65	3.45	4.35	4.7	4.35	4.8	4.65	4.0	3.15	2.7	2.4	2.4
15	2.65	3.45	4.25	5.35	4.3	4.7	4.6	3.9	3.15	2.7	2.4	2.4
16	2.8	3.3	4.2	5.5	4.3	4.7	4.6	3.85	3.2	2.7	2.4	2.5
17	2.8	3.2	4.1	5.0	4.25	4.6	4.6	3.8	3.1	2.7	2.4	2.8
18	2.7	3.2	4.0	4.6	4.2	4.7	4.65	3.8	3.1	2.6	2.4	2.9
19	2.75	3.3	4.0	4.45	5.4	5.1	4.65	3.7	3.1	2.6	2.4	2.8
20	2.7	3.5	4.0	4.35	4.8	6.9	4.65	3.7	3.1	2.6	2.4	2.7
21	2.75	5.4	3.95	4.3	4.6	7.2	4.55	3.7	3.05	2.5	2.4	2.65
22	3.0	4.3	3.9	4.4	4.65	6.65	4.5	3.7	3.0	2.5	2.4	2.6
23	2.9	4.0	3.8	4.5	4.7	6.95	4.5	3.7	3.0	2.5	2.4	2.6
24	2.8	3.8	3.8	6.0	4.6	5.95	4.4	3.65	3.0	2.5	2.4	2.65
25	2.8	4.1	3.8	5.25	5.05	5.7	4.4	3.6	3.0	2.5	2.4	2.6
26	2.8	4.1	3.8	4.95	4.8	5.4	4.4	3.6	3.0	2.5	2.4	2.55
27	2.7	3.85	3.7	4.75	4.7	5.15	4.4	3.55	3.0	2.5	2.4	2.55
28	2.8	3.7	3.7	4.65	4.7	5.05	4.4	3.5	2.9	2.5	2.4	2.5
29	2.95	3.6	3.65	4.6	.....	4.95	4.45	3.5	2.9	2.5	2.4	2.5
30	3.2	3.6	3.6	4.5	.....	4.8	4.3	3.5	2.9	2.5	2.35	2.5
31	3.1	.....	6.1	4.45	.....	4.8	.....	3.5	.....	.....	2.35	.....
1910–11.												
1	2.5	2.7	2.95	3.0	7.8	4.5	5.6	4.8	4.5	3.62	2.7	2.3
2	2.5	2.7	2.9	2.95	6.6	4.65	5.75	4.8	4.45	3.6	2.62	2.3
3	2.5	2.7	3.0	2.97	6.05	5.15	5.78	4.8	4.5	3.6	2.6	2.3
4	2.5	2.7	3.75	3.0	6.0	6.35	5.7	4.85	4.55	3.6	2.6	2.3
5	2.5	2.7	3.5	3.0	5.7	6.3	6.1	5.08	4.5	3.5	2.6	2.32
6	2.5	2.7	3.3	3.0	5.65	6.2	6.6	4.95	4.5	3.5	2.6	2.35
7	2.5	2.7	3.2	3.0	5.3	9.05	6.1	4.9	4.58	3.5	2.6	2.35
8	2.5	2.7	3.2	3.0	5.05	7.8	5.85	4.8	4.58	3.4	2.6	2.38
9	2.5	2.7	3.2	3.32	4.95	6.95	5.88	4.75	4.5	3.4	2.6	2.35
10	2.55	2.8	3.2	4.3	4.82	6.65	6.0	4.72	4.42	3.3	2.55	2.35
11	2.6	2.8	3.65	3.95	5.75	6.1	5.55	4.7	4.5	3.28	2.54	2.35
12	2.75	2.8	3.8	7.6	5.05	5.8	5.42	4.75	4.5	3.3	2.5	2.35
13	3.0	3.15	3.5	7.7	5.75	5.5	5.2	4.72	4.42	3.25	2.5	2.4
14	2.9	3.05	3.4	7.75	5.35	5.45	5.05	4.7	4.38	3.2	2.5	2.4
15	2.8	2.9	3.3	6.05	5.05	5.25	5.0	4.68	4.3	3.15	2.5	2.45
16	2.7	2.9	3.2	4.7	4.85	5.2	5.0	4.6	4.3	3.1	2.5	2.4
17	2.7	2.9	3.2	4.3	4.75	5.1	5.0	4.6	4.3	3.1	2.5	2.35
18	2.7	2.9	3.1	4.1	4.65	5.1	5.0	4.52	4.28	3.05	2.5	2.35
19	2.7	2.9	3.1	4.35	4.6	5.1	5.08	4.5	4.25	3.0	2.45	2.35
20	2.7	3.0	3.05	6.7	4.55	5.15	5.08	4.5	4.22	3.0	2.42	2.35
21	2.7	2.9	3.0	6.2	4.45	5.2	5.08	4.5	4.1	2.92	2.4	2.35
22	2.7	2.9	3.0	5.05	4.4	5.2	5.12	4.6	4.02	2.9	2.4	2.35
23	2.7	2.9	3.0	4.7	4.4	5.25	5.2	4.72	3.95	2.9	2.4	2.35
24	2.7	2.9	3.0	7.55	4.35	5.25	5.2	4.8	3.88	2.9	2.36	2.35
25	2.7	3.0	3.0	7.55	4.3	5.25	5.35	4.65	3.82	2.88	2.35	2.4
26	2.7	3.35	3.0	6.7	4.28	5.25	5.38	4.6	3.8	2.8	2.35	2.5
27	2.7	3.2	3.0	5.65	4.3	5.25	5.28	4.5	3.8	2.8	2.35	2.5
28	2.65	3.0	3.0	5.7	4.3	5.28	5.1	4.5	3.8	2.75	2.35	2.5
29	2.65	3.0	2.95	7.95	.....	5.28	4.95	4.5	3.72	2.72	2.35	2.5
30	2.7	3.0	2.95	10.5	.....	5.42	4.8	4.5	3.68	2.7	2.35	2.5
31	2.7	.....	3.0	10.9	.....	5.52	.....	4.52	.....	2.7	2.32	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	2.5	2.6	2.7	3.08	3.22	2.9	3.4	4.5	4.05
2	2.58	2.6	2.7	3.1	3.2	2.9	3.42	4.55	4.0
3	2.7	2.6	2.7	2.88	3.18	2.9	3.5	4.3	3.95
4	2.7	2.6	2.7	2.8	3.15	3.0	3.48	4.2	3.85
5	2.7	2.6	2.72	2.9	3.1	3.12	3.5	4.2	3.82

Daily gage height, in feet, of Cosumnes River at Michigan Bar, Cal., for 1907–1912—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
6	2.75	2.6	2.8	2.92	3.1	4.15	3.42	4.1	3.8
7	2.7	2.6	2.8	2.95	3.1	4.55	3.4	4.1	3.75
8	2.68	2.6	2.85	3.15	3.08	3.95	3.5	4.1	3.7
9	2.62	2.6	2.8	3.1	3.05	3.78	3.5	4.1	3.6
10	2.7	2.7	2.8	3.48	3.05	3.62	3.65	4.1	3.5
11	2.7	3.32	2.8	3.8	3.08	3.6	3.85	4.1	3.5
12	2.62	3.0	2.75	3.45	3.05	3.55	3.8	4.2	3.45
13	2.6	2.85	2.75	3.28	3.0	3.8	3.6	4.0	3.68
14	2.6	2.8	2.75	3.18	3.0	3.75	3.58	4.0	3.55
15	2.6	2.8	2.78	3.1	3.0	3.65	3.5	4.1	3.45
16	2.6	2.8	2.8	3.2	3.0	4.1	3.5	4.05	3.38
17	2.58	2.95	2.8	3.64	3.0	3.75	3.5	3.92	3.3
18	2.5	2.89	2.9	3.35	3.0	3.6	3.5	4.0	3.22
19	2.5	2.8	2.8	3.28	3.02	3.54	3.5	4.0	3.18
20	2.5	2.8	2.8	3.24	3.05	3.5	3.5	3.98	3.08
21	2.5	2.8	2.8	3.15	3.0	3.5	3.5	4.1	3.05
22	2.5	2.8	2.72	3.1	3.0	3.44	3.49	3.95	3.05
23	2.5	2.79	2.8	3.1	2.97	3.4	3.42	3.9	3.1
24	2.5	2.75	2.85	3.1	2.95	3.4	3.42	3.85	3.08
25	2.5	2.7	2.8	3.1	2.9	3.42	3.62	3.89	3.0
26	2.5	2.74	2.7	3.45	2.9	3.48	3.65	4.35	3.0
27	2.5	2.8	2.7	4.1	2.9	3.5	3.69	4.45	2.9
28	2.55	2.7	3.0	3.68	2.9	3.5	3.7	4.3	2.9
29	2.65	2.7	3.0	3.5	2.9	3.48	3.98	4.2	2.88
30	2.6	2.7	2.9	3.4	.....	3.45	4.4	4.2	2.8
31	2.6	.....	2.99	3.3	.....	3.42	.....	4.15	.....

NOTE.—Gage heights estimated by observer Jan. 14–22, 1909.

Rating table for Cosumnes River at Michigan Bar, Cal., for 1907 and 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*	*Feet.*	*Sec.-feet.*
2.50	0	3.30	72	4.10	450	4.90	1,410
2.60	5	3.40	90	4.20	545	5.00	1,590
2.70	12	3.50	114	4.30	640	5.10	1,780
2.80	19	3.60	142	4.40	740	5.20	1,980
2.90	27	3.70	180	4.50	850	5.30	2,180
3.00	36	3.80	225	4.60	970		
3.10	46	3.90	285	4.70	1,100		
3.20	58	4.00	360	4.80	1,245		

NOTE.—This table is not applicable for periods of obstructed channel. It is based on eight discharge measurements made during 1907 and 1908, and is fairly well defined.

Daily discharge, in second-feet, of Cosumnes River at Michigan Bar, Cal., for 1909–1912.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1	62	1,200	988	920	988	480	86	11	6
2	96	858	988	858	988	528	86	11	6
3	166	2,230	1,350	988	1,060	575	86	11	6
4	166	1,850	3,100	1,060	988	528	69	11	6
5	166	2,040	2,440	1,130	1,060	480	69	11	8
6	628	1,680	2,870	1,060	1,060	480	69	11	11
7	628	4,350	2,440	1,060	920	400	69	11	11
8	1,850	2,330	2,130	1,060	858	400	69	11	11
9	3,680	1,680	1,850	1,060	920	365	55	11	6
10	1,060	1,350	1,510	1,200	795	330	55	11	11

Daily discharge, in second-feet, of Cosumnes River at Michigan Bar, Cal., for 1909–1912— Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
11	528	5,180	1,430	1,200	738	365	55	11	8
12	440	10,600	1,350	1,200	575	330	50	8	6
13	7,360	7,200	1,200	1,200	528	265	44	6	6
14	20,800	4,350	1,200	1,350	480	265	44	6	6
15	9,260	3,210	1,060	1,510	480	208	44	6	6
16	8,350	2,760	1,060	1,590	480	208	34	6	6
17	8,020	2,870	1,130	1,760	400	208	34	6	6
18	7,690	2,980	1,130	1,760	480	265	34	6	6
19	7,690	2,650	1,060	1,760	400	208	26	6	6
20	7,690	2,760	1,130	1,680	400	187	26	6	6
21	15,400	2,440	1,200	1,510	480	187	26	6	8
22	8,720	2,040	1,060	1,280	575	166	26	6	8
23	5,630	1,680	920	1,130	480	150	18	6	8
24	3,210	1,680	920	1,130	480	133	18	8	11
25	2,980	1,510	795	988	480	133	18	8	14
26	2,440	1,350	920	1,060	480	133	18	11	18
27	2,230	1,200	795	1,200	480	133	18	11	18
28	1,760	1,060	738	1,060	480	107	18	6	11
29	1,510	.....	1,350	1,060	480	107	14	6	11
30	1,680	.....	1,200	988	440	96	14	6	11
31	1,350	.....	988	.....	440	.....	11	6	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10.												
1	18	50	1,760	3,950	995	1,250	1,400	770	160	46	8	2
2	18	39	3,100	1,860	995	1,250	1,400	676	160	46	8	2
3	18	34	1,350	1,320	880	1,400	1,400	676	160	32	8	2
4	34	39	1,130	1,060	880	1,400	1,320	676	145	39	8	2
5	34	34	1,060	880	770	1,550	1,250	588	130	39	8	2
6	34	34	795	880	676	1,480	1,250	588	130	39	8	3
7	26	34	1,200	770	1,120	1,400	1,250	504	130	32	8	2
8	26	44	795	676	1,060	1,400	1,250	504	130	32	8	2
9	26	69	7,030	723	938	1,400	1,250	546	117	32	4	2
10	18	208	2,760	676	880	1,400	1,250	546	104	27	4	2
11	18	208	1,590	588	770	1,400	1,550	504	104	22	4	2
12	18	133	1,130	588	770	1,400	1,320	504	104	22	4	4
13	18	96	988	504	770	1,440	1,250	504	104	22	4	4
14	14	120	738	1,250	825	1,400	1,180	504	93	22	4	4
15	14	120	628	2,280	770	1,250	1,120	428	93	22	4	4
16	26	86	575	2,560	770	1,250	1,120	393	104	22	4	8
17	26	69	480	1,700	723	1,120	1,120	358	82	22	4	32
18	18	69	400	1,120	676	1,250	1,180	358	82	14	4	46
19	22	86	400	938	2,370	1,860	1,180	293	82	14	4	32
20	18	133	400	825	1,400	6,230	1,180	293	82	14	4	22
21	22	2,440	365	770	1,120	7,200	1,060	293	72	8	4	18
22	44	680	330	880	1,180	5,470	995	293	63	8	4	14
23	34	400	265	995	1,250	6,390	995	293	63	8	4	14
24	26	265	265	3,700	1,120	3,580	880	266	63	8	4	18
25	26	480	265	2,100	1,780	2,980	880	240	63	8	4	14
26	26	480	265	1,620	1,400	2,370	880	240	63	8	4	11
27	18	297	208	1,320	1,250	1,940	880	218	63	8	4	11
28	26	208	208	1,180	1,250	1,780	880	196	46	8	4	8
29	39	166	187	1,120	.....	1,620	938	196	46	8	4	8
30	69	166	166	995	.....	1,400	770	196	46	8	3	8
31	55	.....	4,080	938	.....	1,400	.....	196	.....	8	3	.....
1910–11.												
1	8	22	54	63	9,280	1,050	2,760	1,410	1,050	310	53	24
2	8	22	46	54	5,320	1,220	3,100	1,410	995	300	45	24
3	8	22	63	58	3,820	1,940	3,160	1,410	1,050	300	43	24
4	8	22	326	63	3,700	4,610	2,980	1,480	1,100	300	43	24
5	8	22	196	63	2,980	4,470	3,950	1,830	1,050	255	43	25
6	8	22	130	63	2,870	4,210	5,320	1,620	1,050	255	43	26
7	8	22	104	63	2,190	14,100	3,950	1,550	1,140	255	43	26
8	8	22	104	63	1,780	9,280	3,330	1,410	1,140	215	43	28
9	8	22	104	136	1,620	6,390	3,400	1,340	1,050	215	43	26
10	11	32	104	770	1,440	5,470	3,700	1,310	962	180	39	26

Daily discharge, in second-feet, of Cosumnes River at Michigan Bar, Cal., for 1909–1912—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
11	14	32	266	466	3,100	3,950	2,660	1,280	1,050	174	38	26
12	27	32	358	8,560	1,780	3,210	2,410	1,340	1,050	180	35	26
13	63	93	196	8,920	3,100	2,560	2,020	1,310	962	165	35	29
14	46	72	160	9,100	2,280	2,460	1,780	1,280	920	150	35	29
15	32	46	130	3,820	1,780	2,100	1,700	1,260	840	136	35	32
16	22	46	104	1,250	1,480	2,020	1,700	1,160	840	123	35	29
17	22	46	104	770	1,340	1,860	1,700	1,160	840	123	35	26
18	22	46	82	588	1,220	1,860	1,700	1,070	820	112	35	26
19	22	46	82	820	1,160	1,860	1,830	1,050	790	101	32	26
20	22	63	72	5,620	1,100	1,940	1,830	1,050	760	101	30	26
21	22	46	63	4,210	995	2,020	1,830	1,050	650	86	29	26
22	22	46	63	1,780	940	2,020	1,890	1,160	578	82	29	26
23	22	46	63	1,250	940	2,100	2,020	1,310	520	82	29	26
24	22	46	63	8,380	890	2,100	2,020	1,410	466	82	27	26
25	22	63	63	8,380	840	2,100	2,280	1,220	424	79	26	29
26	22	145	63	5,620	820	2,100	2,330	1,160	410	66	26	35
27	22	104	63	2,870	840	2,100	2,160	1,050	410	66	26	35
28	18	63	63	2,980	840	2,160	1,860	1,050	410	60	26	35
29	18	63	54	9,820	.....	2,160	1,620	1,050	362	56	26	35
30	22	63	54	20,600	.....	2,410	1,410	1,050	340	53	26	35
31	22	.....	63	22,400	.....	2,600	.....	1,070	.....	53	25	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	35	43	53	119	156	82	215	840	605
2	41	43	53	123	150	82	223	1,100	560
3	53	43	53	79	145	82	255	840	520
4	53	43	53	66	136	101	247	740	445
5	53	43	56	82	123	128	255	740	424
6	60	43	66	86	123	695	223	650	410
7	53	43	66	92	123	1,100	215	650	380
8	51	43	74	136	119	520	255	650	350
9	45	43	66	123	112	398	255	650	300
10	53	53	66	247	112	310	325	650	255
11	53	187	66	410	119	300	445	650	255
12	45	180	60	235	112	278	410	740	235
13	43	74	60	174	101	410	300	560	340
14	43	66	60	145	101	380	291	560	278
15	43	66	63	123	101	325	255	650	235
16	43	66	66	150	101	650	255	605	208
17	41	92	66	320	101	380	255	496	180
18	35	80	82	198	101	300	255	560	156
19	35	66	66	174	105	273	255	605	145
20	35	66	66	162	112	255	255	544	119
21	35	66	66	136	101	255	255	650	112
22	35	66	56	123	101	231	251	520	112
23	35	65	66	123	95	215	223	480	123
24	35	60	74	123	92	215	223	445	119
25	35	53	66	123	82	223	310	473	101
26	35	58	53	235	82	247	325	890	101
27	35	66	53	650	82	255	345	995	82
28	39	53	101	340	82	255	350	840	82
29	48	53	101	255	82	247	544	740	79
30	43	53	82	215	.....	235	940	740	66
31	43	.....	99	180	.....	223	.....	695	.....

NOTE.—Daily discharge determined from well-defined rating curves applicable as follows: Jan. 1, 1909, to Dec. 31, 1909; Jan. 1, 1910, to Jan. 31, 1911; Feb. 1, 1911, to June 30, 1912.

Monthly discharge of Cosumnes River at Michigan Bar, Cal., for 1907–1912.

[Drainage area, 524 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1907–8.							
October 20–31			73.2	0.140	0.06	1,740	B.
November	72	58	67.1	.128	.14	3,990	B.
December	497	58	195	.372	.43	12,000	B.
January	2,180	142	471	.899	1.04	29,000	B.
February	592	180	306	.584	.63	17,600	B.
March	850	322	552	1.05	1.21	33,900	B.
April	405	285	346	.660	.74	20,600	B.
May	640	255	359	.685	.79	22,100	B.
June	225	46	106	.202	.23	6,310	B.
July	46	0	15.5	.030	.03	953	B.
August	0	0	.0	.000	.00	0	B.
September	5	0	1.7	.003	.003	101	B.
The year	2,180	0	208	.396	5.30	148,000	
1908–9.							
October	65	0	13.5	.026	.03	830	B.
November	102	12	27	.052	.06	1,610	B.
December	142	36	48.8	.093	.11	3,000	B.
January	20,800	62	4,300	8.21	9.46	264,000	B.
February	10,600	858	2,750	5.25	5.47	153,000	B.
March	3,100	738	1,360	2.60	3.00	83,600	A.
April	1,760	858	1,230	2.35	2.62	73,200	A.
May	1,060	400	642	1.22	1.40	39,500	B.
June	575	96	281	.536	.60	16,700	B.
July	86	11	42.0	.080	.09	2,580	B.
August	11	6	8.29	.016	.02	510	C.
September	18	6	8.73	.017	.02	519	C.
The year	20,800	0	893	1.70	22.88	638,000	
1909–10.							
October	69	14	25.9	.049	.06	1,590	B.
November	2,440	34	243	.464	.52	14,500	B.
December	7,030	166	1,130	2.16	2.49	69,500	A.
January	3,950	504	1,320	2.52	2.90	81,200	A.
February	2,370	676	1,050	2.00	2.08	58,300	A.
March	7,200	1,120	2,210	4.22	4.86	136,000	A.
April	1,550	770	1,150	2.19	2.44	68,400	A.
May	770	196	414	.790	.91	25,500	A.
June	160	46	96.1	.183	.20	5,720	A.
July	46	8	20.9	.040	.05	1,290	A.
August	8	3	5.0	.0095	.01	307	B.
September	46	2	10.1	.019	.02	601	B.
The year	7,200	2	639	1.22	16.54	463,000	
1910–11.							
October	63	8	19.6	.037	.04	1,210	A.
November	145	22	47.9	.091	.10	2,850	A.
December	358	46	112	.214	.25	6,890	A.
January	22,400	54	4,180	7.98	9.20	257,000	A.
February	9,280	820	2,160	4.12	4.29	120,000	A.
March	14,100	1,050	3,240	6.18	7.12	199,000	A.
April	5,320	1,410	2,480	4.73	5.28	148,000	A.
May	1,830	1,050	1,270	2.42	2.79	78,100	B.
June	1,140	340	801	1.53	1.71	47,700	B.
July	310	53	152	.290	.33	9,350	B.
August	53	25	34.8	.066	.08	2,140	B.
September	35	24	27.9	.053	.06	1,660	C.
The year	22,400	8	1,210	2.31	31.25	874,000	
1911–12.							
October	60	35	42.9	.082	.09	2,640	B.
November	187	43	65.9	.126	.14	3,920	B.
December	101	53	67.0	.128	.15	4,120	B.
January	650	66	185	.353	.41	11,400	C.
February	156	82	109	.208	.22	6,270	C.
March	1,100	82	311	.594	.68	19,100	B.
April	940	215	307	.586	.65	18,300	B.
May	1,100	445	676	1.29	1.49	41,600	B.
June	605	66	246	.469	.52	14,600	C.
The period						122,000	

COSUMNES RIVER BELOW MICHIGAN BAR,[a] CAL.

The following information regarding records of discharge of Cosumnes River, collected by the State Engineering Department of California, has been abstracted from "Physical data and statistics of California," by Wm. Ham. Hall.

The tables represent an approximate statement of the discharge of Cosumnes River at the point of its flow from the mountains into the valley and does not include the discharge of Deer and Carson creeks, which join it below.

Monthly discharge of Cosumnes River below Michigan Bar at Live Oak Suspension Bridge, Cal., for 1878–1884.[b]

[Drainage area, 580 square miles.]

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1878–79.				
November	29	0.05	0.06	1,726
December	29	.05	.06	1,783
January	290	.50	.58	17,831
February	1,218	2.10	2.19	67,644
March	1,740	3.00	3.46	106,988
April	3,132	5.40	6.03	186,367
May	3,248	5.60	6.46	199,712
June	3,480	6.00	6.69	207,074
July	422	.73	.84	25,948
August	116	.20	.23	7,133
September	23	.04	.04	1,369
October	17	.03	.03	1,045
The year	1,140	1.97	26.67	825,000
1879–80.				
November	52	.09	.10	3,094
December	406	.70	.81	24,964
January	232	.40	.46	14,265
February	441	.76	.82	25,367
March	696	1.20	1.38	42,795
April	4,582	7.90	8.81	272,648
May	5,104	8.80	10.15	313,833
June	6,090	10.50	11.71	362,380
July	2,726	4.70	5.42	167,615
August	348	.60	.69	21,398
September	29	.05	.06	1,726
October	17	.03	.03	1,045
The year	1,730	2.98	40.44	1,270,000
1880–81.				
November	12	.02	.02	714
December	290	.50	.58	17,831
January	1,624	2.80	3.23	99,856
February	3,074	5.30	5.52	170,721
March	1,102	1.90	2.19	67,759
April	3,190	5.50	6.14	189,818
May	3,074	5.30	6.11	189,013
June	1,218	2.10	2.34	72,476
July	174	.30	.35	10,699
August	87	.15	.17	5,349
September	87	.15	.17	5,177
October	58	.10	.12	3,566
The year	1,170	2.01	26.94	833,000

[a] This station is said to be at Live Oak Suspension Bridge, a few miles below Michigan Bar.
[b] The entire record is estimated from the run-off of neighboring streams.

Monthly discharge of Cosumnes River below Michigan Bar at Live Oak Suspension Bridge, Cal., for 1878–1884—Continued.

Month.	Discharge in second-feet.		Run-off.	
	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
1881–82.				
November	174	0.30	0.33	10,354
December	522	.90	1.04	32,097
January	522	.90	1.04	32,097
February	522	.90	.94	28,990
March	1,740	3.00	3.46	106,988
April	2,320	4.00	4.46	138,050
May	4,524	7.80	8.99	278,170
June	2,900	5.00	5.58	172,562
July	696	1.20	1.38	42,795
August	580	1.00	1.15	35,663
September	52	.09	.10	3,094
October	232	.40	.46	14,265
The year	1,230	2.12	28.93	895,000
1882–83.				
November	100	.17	.19	5,950
December	100	.17	.20	6,149
January	348	.60	.69	21,398
February	290	.50	.52	16,106
March	522	.90	1.04	32,097
April	1,740	3.00	3.35	103,537
May	3,480	6.00	6.92	213,977
June	2,320	4.00	4.46	138,050
July	580	1.00	1.15	35,663
August	232	.40	.46	14,265
September	87	.15	.17	5,177
October	87	.15	.17	5,349
The year	827	1.42	19.32	597,000
1883–84.				
November	116	.20	.22	6,902
December	116	.20	.23	7,133
January	145	.25	.29	8,916
February	1,740	3.00	3.24	100,086
March	3,480	6.00	6.92	213,977
April	3,480	6.00	6.69	207,074
May	2,900	5.00	5.76	178,314
June	2,320	4.00	4.46	138,050
July	2,320	4.00	4.61	142,651
August	580	1.00	1.15	35,663
September	116	.20	.22	6,902
October	87	.15	17	5,349
The year	1,450	2.50	33.96	1,050,000

NORTH FORK OF COSUMNES RIVER NEAR PLEASANT VALLEY, CAL.

This station is located near the north boundary of the SE. ¼ SW. ¼ sec. 6, T. 10 N., R. 12 E., just above the road crossing at Bucks Bar, about 2½ miles below the mouth of Camp Creek, 2 miles above the mouth of Long Ravine Creek, and 3 miles southwest of Pleasant Valley.

The drainage area above the station is about 158 square miles.

The gage is a vertical staff on the right bank just above the car and cable from which discharge measurements are made. Flood measurements were made by floats over a 200-foot range.

The channel is composed of gravel and is fairly permanent.

When the stage was changing rapidly the gage was read several times each day. There is a small diversion from Camp Creek, known as the Crawford ditch, which is used for irrigation. Results are considered good.

The following records were furnished by Duryea, Haehl & Gilman, of San Francisco, Cal.

Daily discharge, in second-feet, of North Fork of Cosumnes River near Pleasant Valley, Cal., for 1906–7.

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906.								
1	.....	689	a 3,680	840	1,240	362	57	22
2	.....	a 741	2,260	874	1,160	363	56	.....
3	.....	793	1,740	949	1,240	356	53	.....
4	.....	742	1,450	998	1,340	343	51	.....
5	.....	560	1,230	a 1,020	1,250	324	50	.....
6	.....	a 553	1,100	a 1,050	1,180	312	48	.....
7	.....	a 546	1,070	1,070	1,090	295	46	.....
8	.....	539	1,010	1,060	1,010	276	45	.....
9	.....	576	980	1,010	955	254	43	.....
10	.....	615	1,250	929	929	224	42	.....
11	.....	690	1,160	1,190	883	209	50	.....
12	.....	3,170	1,100	1,000	903	201	45	.....
13	.....	1,860	1,070	874	810	187	37	.....
14	.....	1,830	1,060	833	734	176	32	.....
15	.....	2,130	1,010	955	681	156	30	.....
16	.....	1,180	980	804	821	144	29	.....
17	.....	972	1,030	739	662	128	29	.....
18	.....	a 786	1,040	736	633	120	31	.....
19	.....	601	988	715	595	108	25	.....
20	.....	676	1,100	688	558	101	24	.....
21	.....	a 873	a 1,100	656	537	95	24	.....
22	.....	1,060	1,100	590	511	90	25	.....
23	.....	1,480	1,250	550	484	85	27	.....
24	.....	4,200	983	520	461	79	24	.....
25	.....	4,820	956	594	463	73	27	.....
26	.....	4,810	875	1,080	443	71	25	.....
27	970	a 3,480	976	2,160	413	69	25	.....
28	843	2,150	967	2,950	373	65	22	.....
29	.....	1,780	875	1,900	367	65	22	.....
30	.....	2,320	835	1,540	359	63	27	.....
31	.....	5,110	.....	1,350	.....	61	25	.....

Day.	Aug.	Sept.	Oct.	Nov.	Dec.	Day.	Aug.	Sept.	Oct.	Nov.	Dec.
1907.						1907.					
1	.....	.....	.....	.....	.....	16	.....	.....	.....	.....	.....
2	.....	.....	24	.....	.....	17	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	18	.....	.....	.....	.....	.....
4	.....	28	.....	.....	26	19	.....	22	.....	.....	.....
5	.....	.....	.....	.....	.....	20	.....	.....	.....	30	.....
6	.....	.....	.....	30	.....	21	.....	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	22	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	23	.....	.....	22	.....	.....
9	.....	.....	24	.....	.....	24	.....	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	25	.....	.....	.....	.....	.....
11	.....	20	.....	.....	148	26	.....	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	27	28	.....	.....	28	.....
13	.....	.....	.....	32	.....	28	.....	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	29	.....	.....	38	.....	.....
15	.....	.....	20	.....	.....	30	.....	.....	.....	.....	.....
						31	.....	.....	.....	.....	.....

a Interpolated by engineers of the U. S. Geol. Survey.

NOTE.—Record of daily discharge furnished by Duryea, Haehl & Gilman.

Monthly discharge of North Fork of Cosumnes River near Pleasant Valley, Cal., for 1906.

[Drainage area, 158 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
March	5,110	539	1,690	10.7	12.34	104,000
April	3,680	835	1,210	7.66	8.55	72,000
May	2,950	520	1,040	6.58	7.59	64,000
June	1,340	359	770	4.87	5.43	45,800
July	363	61	176	1.11	1.28	10,800
August	57	22	35.4	.224	.26	2,180
The period						299,000

NOTE.—Monthly discharge computed by engineers of the U. S. Geol. Survey from record of daily discharge furnished by Duryea, Haehl, and Gilman. Accuracy values are not given, as the base data was not furnished.

NORTH FORK OF COSUMNES RIVER NEAR EL DORADO, CAL.

This station, which is located at the suspension footbridge at Celio's ranch,[1] in sec. 23, T. 9 N., R. 10 E., about 5½ miles south of El Dorado, 4 miles above junction with Middle Fork and about 1½ miles below Martinez Creek, was established August 13, 1911.

The gage is a vertical staff in three sections on the right bank at the bridge.

The bed of the stream is composed of gravel and solid rock.

Discharge measurements are made from the bridge just above the gage.

Discharge measurements of North Fork of Cosumnes River near El Dorado, Cal., in 1911–12.

Date.	Hydrographer.	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-feet.*
Aug. 13	F. C. Ebert	3.38	28
Sept. 23	do	3.25	20
1912.			
Jan. 23	J. E. Stewart	3.73	57
Mar. 7	H. D. McGlashan	5.35	428
7	do	5.12	363
29	Lasley Lee	4.22	132
June 8	do	4.56	214

[1] Kings Store on map of Placerville quadrangle, U. S. Geol. Survey.

Daily gage height, in feet, of North Fork of Cosumnes River near El Dorado, Cal., for 1911–12.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1911.			1911.			1911.		
1		3.2	11			21	3.3	
2			12		3.3	22	3.2	3.2
3		3.2	13	3.4		23		3.25
4			14			24		3.25
5			15			25	3.2	
6		3.2	16	3.3	3.3	26		
7			17			27	3.2	
8			18			28		3.3
9		3.2	19	3.3	3.2	29		
10		3.2	20			30	3.2	3.3
						31		

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	3.32				3.9		4.2	5.45	5.0
2		3.4	3.5	3.55		3.7		5.8	4.95
3	3.45		3.5		3.8	3.7	4.25	5.3	4.9
4		3.4		3.6	3.8			5.3	4.8
5	3.5	3.4	3.5			4.3	4.25	5.25	4.7
6				3.9	3.7	6.3	4.2	5.1	
7	3.45	3.4	3.55	3.9		5.2	4.3	5.2	4.5
8	3.4				3.7	4.7	4.2	5.2	4.55
9		3.45	3.5	4.35		4.5		5.25	4 4
10	3.45		3.45		3.7	4.4	4.5	5.2	4.3
11		3.8		4.2	3.7		4.6	5.2	4.25
12		3.65	3.45			4.3	4.5		4.3
13	3.4			3.9	3.7	4.6	4.5	5.2	4.7
14	3.4	3.5	3.45	3.8		4.4	4.3	5.2	4.3
15	3.4				3.7	4.35		5.2	4.2
16		3.7	3.45	3.9		4.7	4.3	5.1	4.1
17	3.35		3.45		3.7	4.4	4.3	5.0	4.0
18		3.55		3.9	3.7	4.3		4.95	3.92
19		3.55	3.5			4.25	4.3	4.9	3.88
20				3.9	3.7		4.3	5.1	3.82
21		3.5	3.45	3.8		4.2	4.3	5.0	3.80
22	3.35				3.65			5.0	3.80
23		3.45	3.5	3.73		4.15	4.2	4.85	3.85
24	3.4		3.5		3.6	4.2	4.5	4.8	3.80
25		3.45		3.7	3.6		4.4	5.0	3.75
26		3.45	3.55			4.2	4.7	5.9	3.70
27	3.4			4.85	3.6		4.5	5.5	3.68
28	3.5	3.5	3.7	4.3		4.2		5.4	3.65
29	3.5				3.6	4.2	5.45	5.4	3.60
30			3.6	4.0		4.2	5.3	5.2	3.55
31	3.45		3.6			4.2		5.1	

Daily discharge, in second-feet, of North Fork of Cosumnes River near El Dorado, Cal., for 1911–12.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1911.			1911.			1911.		
1		18	11		20	21	22	18
2		18	12		22	22	18	18
3		18	13	28	22	23	18	20
4		18	14	26	22	24	18	20
5		18	15	24	22	25	18	20
6		18	16	22	22	26	18	21
7		18	17	22	21	27	18	22*
8		18	18	22	19	28	18	22
9		18	19	22	18	29	18	22
10		18	20	22	18	30	18	22
						31	18	

Daily discharge, in second-feet, of North Fork of Cosumnes River near El Dorado, Cal., for 1911–12—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1911–12.									
1	23	30	36	42	82	50	130	472	322
2	28	28	36	40	75	55	135	603	308
3	32	28	36	42	68	55	140	418	293
4	34	28	36	45	68	102	140	418	266
5	36	28	36	64	62	149	140	401	240
6	34	28	38	82	55	810	130	352	215
8	32	28	40	82	55	384	149	384	191
8	28	28	38	120	55	240	130	384	203
9	30	32	36	159	55	191	160	401	169
10	32	50	32	144	55	169	191	384	149
11	31	68	32	130	55	159	215	384	140
12	30	50	32	106	55	149	191	384	149
13	28	43	32	82	55	215	191	384	240
14	28	36	32	68	55	169	149	384	149
15	28	45	32	68	55	159	149	384	130
16	27	55	32	82	55	240	149	352	113
17	25	48	40	82	55	169	149	322	97
18	25	40	38	82	55	149	149	308	85
19	25	40	36	82	55	140	149	293	79
20	25	38	34	82	55	135	149	352	71
21	25	36	32	68	52	130	149	322	68
22	25	34	34	63	50	126	139	322	68
23	27	32	36	58	48	122	130	280	75
24	28	32	36	56	45	130	191	266	68
25	28	32	38	55	45	130	169	322	61
26	28	32	40	55	45	130	240	642	55
27	28	34	48	280	45	130	191	490	53
28	36	36	55	149	45	130	330	454	50
29	36	36	50	123	45	130	472	454	45
30	34	36	45	97	.....	130	418	384	40
31	32	.....	45	90	.....	130	.....	352	.....

NOTE.—Daily discharge determined from a well-defined rating curve. Discharge interpolated for days on which gage was not read except Jan. 15 and 26, 1912, when discharge was estimated from observer's notes.

Monthly discharge of North Fork of Cosumnes River near El Dorado, Cal., for 1911.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
August 13–31	28	18	20.5	773	A.
September	22	18	19.7	1,170	A.
October	36	23	29.3	1,809	A.
November	68	28	37.0	2,200	A.
December	55	32	37.5	2,300	A.
January	280	40	89.6	5,510	A.
February	82	45	55.2	3,180	A.
March	810	50	171	10,500	A.
April	472	130	184	10,900	A.
May	642	266	389	23,900	A.
June	322	40	139	8,270	A.
The period	.....	.....	.....	85,600	

SLY PARK CREEK AT PARK,[1] CAL.

This station was located just above the road crossing in sec. 9, T. 10 N., R. 13 E., one-fourth mile below mouth of Empire Creek and one-fourth mile above Park post office.

[1] Eastwoods on map of Placerville quadrangle, U. S. Geological Survey.

The staff gage was on the right bank just below the footbridge from which discharge measurements were made. Several gage readings were made each day when the stage was changing rapidly. Results are good.

Record of daily discharge was furnished by Duryea, Hachl & Gilman, of San Francisco, Cal.

Daily discharge, in second-feet, of Sly Park Creek at Park, Cal., for 1906.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	269	51	147	11	5	.....	16	116	65	29	39	.....	.....	.....
2	74	238	47	116	11	.....	.....	17	116	58	27	34	.....	.....	.....
3	58	177	39	116	9	.....	.....	18	85	58	25	29	.....	.....	.....
4	58	147	34	101	6	.....	.....	19	58	58	24	27	.....	.....	.....
5	58	116	27	85	.....	.....	.....	20	58	36	21	26	.....	.....	.....
6	58	116	29	97	10	.....	.....	21	85	39	21	21	.....	.....	.....
7	58	85	29	85	.....	.....	1.5	22	116	39	21	21	.....	.....	.....
8	85	92	29	71	.....	.....	.....	23	177	58	20	21	.....	.....	.....
9	85	85	25	71	.....	.....	.....	24	331	47	19	21	6	.....	.....
10	85	116	21	58	.....	.....	.....	25	363	47	27	20	.....	.....	.....
11	85	116	29	51	.....	.....	.....	26	331	39	58	20	.....	.....	.....
12	269	101	30	49	.....	.....	.....	27	300	39	208	19	.....	.....	.....
13	208	85	25	39	8	.....	.....	28	236	58	290	19	.....	.....	.....
14	177	66	25	39	.....	.....	.....	29	208	56	238	18	.....	.....	.....
15	147	70	33	31	.....	.....	.....	30	177	58	208	18	.....	.....	.....
								31	331	.....	171	.....	.....	.....	.....

Monthly discharge of Sly Park Creek at Park, Cal., for 1906.

Month.	Discharge in second-feet.			Run-off (in acre-feet).
	Maximum.	Minimum.	Mean.	
1906.				
March 2-31	363	58	153	9,100
April	269	36	87.8	5,220
May	290	19	60.6	3,730
June	147	18	50.3	2,990

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

MISCELLANEOUS MEASUREMENTS.

The following miscellaneous discharge measurements have been made in the San Joaquin drainage basin:

Miscellaneous measurements in San Joaquin River drainage basin.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
Sept. 8, 1899	San Joaquin River	500 feet above Friant (Pollasky) Bridge	269
Sept. 28, 1900	do	do	188
Oct. 16, 1901	do	At Friant Ford	315
Sept. 8, 1902	do	do	309
Jan. 23, 1882	do	At Friant	330
June 20, 1881	do	At Herndon	4,640
July 27, 1881	do	do	2,220
Jan. 31, 1882	do	do	300
Sept. 23, 1882	do	do	249
Nov. 21, 1883	do	do	257

Miscellaneous measurements in San Joaquin River drainage basin—Continued.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
Sept. 12, 1902	San Joaquin River	Below dam at Mendota	25
Sept. 27, 1902	do	Near Lathrop	589
Sept. 7, 1902	do	150 yards below junction with Jackass Creek.	342
Sept. 10, 1902	do	At San Joaquin Electric Co.'s power house.	310
Sept. 9, 1905	do	do	310
Sept. 9, 1903	do	Below mouth of Chiquita San Joaquin	264
Sept. 8, 1902	San Joaquin River, Middle Fork	100 yards above Miller Bridge	148
Sept. 6, 1905	do	At Devil Post Pile, Mount Lyell quadrangle.	37
July 24, 1911	do	do	593
July 26, 1911	do	do	418
Sept. 7, 1905	San Joaquin River, North Fork	3 miles above mouth	36
July 23, 1911	do	Wagon trail crossing at Soda Spring	594
Aug. 31, 1900	San Joaquin River, South Fork	At Blancy Meadows	31
Sept. 10, 1902	do	At trail crossing	107
Sept. 4, 1905	do	At Mono trail crossing	104
Sept. 27, 1900	Chiquita San Joaquin	Madera County	22.6
Sept. 9, 1903	do	At mouth	10
July 27, 1896	Bear Creek	¼ mile above mouth	70.6
Sept. 10, 1902	Big Creek	At dam site of J. S. Eastwood	9
Sept. 2, 1905	do	Above mouth of Home Camp Creek	4.8
Sept. 2, 1905	do	Below mouth of Home Camp Creek	5.7
Sept. 9, 1902	Canal	At San Joaquin power house	18
Sept. 12, 1902	Canal, Miller & Lux	At small dam	260
Sept. 12, 1902	do	At bridge near dredger	265
Aug. 6, 1879	Canal, San Joaquin and Kings River.		328
July 13, 1911	Cascadel Creek	Near Cascadel ranch, SE. ¼ sec. 16, T. 8 S., R. 23 E.	1.4
July 14, 1911	Chiquito Creek	Big Shuteye Trail Ford, SW. ¼ sec. 29, T. 6 S., R. 24 E.	190
Sept. 11, 1903	Ditch, Saqual	At site of old mill of Madero Flume and Trading Co.	3.8
Sept. 6, 1905	Fish Creek	3 miles above mouth	51
Sept. 6, 1902	Granite Creek	100 feet below sheep bridge	.7
July 31, 1911	do	Wagon trail crossing, SW. ¼ sec. 5, T. 5 S., R. 25 E.	117
Sept. 2, 1905	Home Camp Creek	100 feet above mouth	.9
Sept. 7, 1902	Jackass Creek	50 feet above mouth	3
July 15, 1911	do	McCreary-Shuteye trail, NE. ¼ sec. 2, T. 6 S., R. 24 E.	58
Sept. 7, 1905	King Creek	¼ mile above mouth	3.5
July 30, 1911	do	On main trail from Jackass Meadow to Mammoth Pass.	56
July 31, 1911	Little Jackass Creek	Near mouth, NW. ¼ sec. 5, T. 5 S., R. 25 E.	11
July 28, 1911	Mingret Creek	Near mouth, about 1½ miles north of Devil Post Pile.	69
Sept. 10, 1902	Mono Creek	At Mono trail crossing	51
Sept. 4, 1905	do	do	43
Sept. 7, 1905	Mugler Creek	½ mile below Mugler Meadow	3
Sept. 2, 1905	Pitman Creek	Below mouth of Tamarack Creek	1.5
Sept. 6, 1905	Reds Creek	¼ mile above mouth	3.9
July 29, 1911	Shadow Creek	Outlet of Shadow Lake, NW. ¼ sec. 17, T. 3 S., R. 26 E.	160
Sept. 4, 1905	Small Creek	1,000 feet above mouth	1.3
July 28, 1911	Soda Creek	Near mouth, about ½ mile north of Devil Post Pile.	6.9
Sept. 2, 1905	Stevenson Creek	¼ mile above head of Shaver Lake	3.9
Sept. 9, 1905	Willow Creek, North Fork	1½ miles above reservoir dam	4.3
July 13, 1911	Whiskey Creek	Above wagon bridge at Cascadel ranch, near North Fork, SW. ¼ sec. 16, T. 8 S., R. 23 E.	12
Sept. 16, 1911	Madera Sugar Pine Co.'s flume	9 miles from Raymond, NE. ¼ sec. 15, T. 8 S., R. 20 E.	7.2
Nov. 10, 1911	do	do	10
Mar. 6, 1912	do	do	9.3
Apr. 16, 1912	do	do	5
May 11, 1912	Fresno Flume & Irrigation Co.'s flume.	About 11 miles south of Friant, near section line between sections 4 and 9, T. 13 S., R. 21 E.	9.9

Miscellaneous measurements in Kern River drainage basin.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
July 18, 1880	Kern River	Rio Bravo Ranch, upper station	1,890
July 18, 1880	do	do	2,500
July 12, 1881	do	do	1,140
Jan. 17, 1882	do	do	324
May 29, 1882	do	do	1,670
Nov. 28, 1883	do	do	186
Oct. 3, 1879	do	Rio Bravo Ranch, lower station	169
July 18, 1880	do	do	2,410
July 18, 1880	do	do	2,530
July 12, 1881	do	do	1,300
Jan. 17, 1882	do	do	310
May 29, 1882	do	do	1,530
Oct. 7, 1902	do	Above gaging station of Kern River Power Co.	127
Oct. 7, 1902	do	Below intake of Kern River Power Co	14
Oct. 7, 1902	do	½ mile below mouth of canyon	174
Oct. 8, 1902	do	½ mile above power house of Kern River Power Co.	188
Oct. 8, 1902	do	200 yards below junction with South Fork	201
Aug. 17, 1903	do	do	254
Oct. 8, 1902	do	350 yards below bridge on road from Isabella to Kernville.	202
Oct. 8, 1902	do	200 feet below Democrat Springs Hotel	179
Oct. 4, 1902	do	100 yards above junction with Little Kern River.	158
Oct. 7, 1902	do	¼ mile above mouth of Salmon Creek	224
Oct. 8, 1902	do	Below Clear Creek	236
July 10, 1898	Kern River	At junction with South Fork	331
June 25, 1900	do	3,000 feet above junction with Little Kern River.	1,155
Aug. 22, 1903	do	do	278
June 27, 1900	do	800 feet above Kern Lake	940
June 20, 1900	do	At Hoopers Mill Bridge	1,333
June 30, 1900	do	4,000 feet above junction with South Fork	825
Aug. 17, 1903	do	3 miles above Kernville	277
July 10, 1899	Kern River, South Fork	At mouth	12.9
July 11, 1899	do	do	17.9
July 13, 1899	do	Sec. 6-22-36, Kern County	10.1
June 20, 1900	do	700 feet above mouth	14.2
Oct. 8, 1902	do	do	18
Aug. 17, 1903	do	Above mouth, near Isabella	17
June 28, 1900	do	Monache Meadows	3.7
July 17, 1898	do	do	5.3
July 2, 1900	do	T. 25 S., R. 35 E., Mount Diablo meridian.	11
Oct. 8, 1902	do	At Weldon road crossing	7
June 24, 1900	Little Kern River	At mouth	81
Oct. 4, 1902	do	100 yards above mouth	158
Aug. 22, 1903	do	do	25
Aug. 24, 1903	do	3 miles above mouth of Shotgun Creek	5.3
June 22, 1900	Ant Creek	At mouth	.18
June 19, 1900	Basin Creek	At Rankin's ranch	1.32
June 29, 1900	Brush Creek	Above mouth of North Fork	8.22
June 29, 1900	Brush Creek, North Fork		1.04
June 21, 1900	Bull Run Creek	Near mouth	2.3
Aug. 18, 1903	do	do	.8
May 1, 1895	Caliente Creek	do	23
Apr. 29, 1912	Canal, Kern River Power Co	At Isabella, NW. ¼ sec. 17, T. 26 S., R. 33 E.	508
May 17, 1912	do	At company's gaging station near Kernville.	553
May 22, 1912	do	do	242
Feb. 10, 1897	Canal, Calloway	At first point of measurement	322
Feb. 10, 1897	do	At second point of measurement	314
June 27, 1900	Creek	South of Bald Mountain	17.6
June 23, 1900	Clark Creek	At Dry Meadows	5.19
Aug. 20, 1903	do	do	2.9
Sept. 8, 1902	Clear Creek	At mouth	.0
June 22, 1900	Corral Creek	Near mouth	.32
Sept. 8, 1902	Ditch, Bennett and Kelley	Above Weldon crossroads	7
Aug. 17, 1903	Ditch, Big Blue Mountain	At mill above Kernville	25
May 20, 1912	do	2 miles above Kernville	52
Oct. 6, 1902	Ditch, Brown's lower	Above dairy	7.9
Oct. 6, 1902	Ditch, Brown's main	At entrance to weir	7
Aug. 15, 1903	Ditch, Brown's ranch		14.5
Oct. 6, 1902	Ditch, Brown's upper	At road crossing to Hot Springs	.5
Aug. 15, 1903	do		15.3
Aug. 15, 1903	Ditch, Cook's	Kernville	.6
July 3, 1900	Ditch, Hooper's mill	At gaging station on Kern River	7.31
Oct. 8, 1902	do	Near Isabella	9
Aug. 17, 1903	do	do	8.9
Aug. 15, 1903	Ditch, Kernville town		.7
Oct. 8, 1902	Ditch, Lower Murphy	Above Weldon road crossing	.7
Oct. 8, 1902	Ditch, Lower Stafford	½ mile north of Stafford's ranch	.6

Miscellaneous measurements in Kern River drainage basin—Continued.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
July 3,1900	Ditch, Neil's	Isabella	1.96
Aug. 17,1903	Ditch, Peterson	Near head, above Kernville	1.5
July 2,1900	Ditch, Powers	Near head, NW. ¼ sec. 24, T. 25 S., R. 35 E.	2.38
Sept. 12,1911	do	do	2.7
Nov. 16,1911	do	do	1.1
May 16,1912	Ditch, Rankin	Near Havilah	1.3
Sept. 8,1902	Ditch, Stafford & Neal	Above flume in gulch	.12
Oct. 6,1902	do	Above Kernville	1.5
Aug. 17,1903	do	do	2.2
Aug. 17,1903	Ditch, Thurston	do	1.9
Oct. 6,1902	Diversion, power company's	At Kernville	160
Jan. 10,1894	Grapevine Creek (Fort Tejon Creek).	2 miles south of Rose Station	40
Mar. 2,1894	do	do	60
Mar. 7,1894	do	do	40
Mar. 22,1894	do	do	8
June 3,1894	do	do	3.2
July 1,1894	do	do	2.4
Sept. 5,1894	do	do	.7
Dec. 8,1894	do	do	61.5
Dec. 31,1894	do	do	5.6
Jan. 1,1895	do	do	4
Feb. 1,1895	do	do	5
Mar. 7,1895	do	do	4.8
May 23,1895	do	do	1.7
Sept. 5,1895	do	do	1.5
Nov. 13,1895	do	do	2.6
Feb. 3,1896	do	do	3.5
June 4,1896	do	do	1.1
Dec. 19,1896	do	do	1.5
June 25,1900	Harris Creek	At mouth	8.45
June 23,1900	Jackson Creek	At Dry Meadows	5.74
Oct. 20,1903	do		2.8
Aug. 21,1903	Nameless Creek		2.4
June 24,1900	North Needles Creek	At Needles Peak	4.26
June 25,1900	Onemile Creek	1 mile below Kern Lake	4.87
Mar. 24,1894	Pastoria Creek	At mouth of canyon	14.3
June 12,1894	do	do	3.7
July 1,1894	do	do	2.5
Sept. 5,1894	do	do	.0
Nov. 1,1894	do	do	.0
Dec. 8,1894	do	do	26
Jan. 1,1895	do	do	.8
Feb. 1,1895	do	do	2.8
Sept. 1,1895	do	do	.0
Nov. 13,1895	do	do	.4
June 22,1900	Salmon Creek	At mouth	3.45
Aug. 19,1903	do	do	1.8
June 30,1900	do	At Horse Meadows	4.05
Oct. 7,1902	do	50 yards above mouth	.5
Aug. 21,1903	Soda Creek	3 miles above mouth	2.4
June 23,1900	South Needles Creek	At Needles Peak	5.82
Dec. 22,1896	Tejon Creek	At foot of hill	1.5
June 25,1900	Tibbetts Creek	1 mile above mouth	2.87
June 29,1900	do		1.8
June 22,1900	Tobias Creek	Near mouth	2.92
Aug. 19,1903	do	do	1.9
June 4,1896	Tunis Creek		1.98
Dec. 15,1896	do		.7
June 23,1900	Wade Creek	At Dry Meadows	5.07
Aug. 20,1903	do		2.6
June 25,1900	Whitney Creek	At tunnel in divide	4.72
June 27,1900	do	At Lava bridge	39.1

Miscellaneous measurements of Kern River canals in 1880–81.

Date.	Canal.	Locality.	Discharge.
			Sec.-ft.
July 6,1880	Beardsley canal	North side	7.8
July 16,1881	do	do	7.8
June 29,1880	Calloway canal	do	452
July 14,1881	do	do	137
July 6,1880	McCord canal	do	14.6
July 16,1881	do	do	5.8

Miscellaneous measurements of Kern River canals in 1880–81—Continued.

Date.	Canal.	Locality.	Discharge.
			Sec.-ft.
July 8, 1880	Emery ditch	North side	3.6
July 18, 1881	do	do	.8
July 8, 1880	Jones & Tuckey ditch	do	2.1
July 18, 1881	do	do	2.1
July 2, 1880	Wible canal	do	35.4
Do	Railroad canal	do	61
July 15, 1881	do	do	23
July 2, 1880	Pioneer canal	do	108
July 15, 1881	do	do	64.5
July 3, 1880	Edwards ditch	do	1.0
July 2, 1880	James & Dixon canal	do	16.8
July 3, 1880	Johnson canal	do	51.1
Do	Ashe ditch	do	6.0
July 7, 1880	Kern Island Canal	South side	154
July 29, 1880	do	do	132
July 16, 1881	do	do	119
June 30, 1880	Farmers Panama Slough canal	do	69.5
July 19, 1881	do	do	38.3
June 28, 1880	Old South Fork canal	do	12.2
July 16, 1881	do	do	56
June 30, 1880	Spanish or Castro canal	do	60.9
July 19, 1881	do	do	5.3
June 30, 1880	Stine canal	do	34.3
July 18, 1881	do	do	81.8
July 8, 1880	Baker & Noble (Anderson) canal	do	9.8
July 20, 1881	do	do	14.2
July 8, 1880	Gates canal	do	4.4
July 1, 1880	Buena Vista canal	do	41.3
July 19, 1881	do	do	9.3
July 1, 1880	James canal	do	42.8
July 19, 1881	do	do	16.4
July 1, 1880	Meacham ditch	do	5.9
July 15, 1881	do	do	8.5
July 2, 1880	Wilson ditch	do	4.6
July 15, 1881	do	do	2.7

Miscellaneous measurements in Tulare Lake drainage basin.

Date.	Steam.	Locality.	Discharge.
			Sec.-ft.
Jan. 17, 1911	Posey Creek		3.5
Jan. 19, 1911	White River	At White River, Cal., S. ½ T. 24 S., R. 29 E.	2.2
Mar. 8, 1911	do	do	30
May 25, 1912	do	do	5.5

Miscellaneous measurements in Tule River drainage basin.

Date.	Steam.	Locality.	Discharge.
			Sec.-ft.
June 21, 1880	Tule River	At Dr. George's place, about 7 miles above Portersville.	565
July 8, 1881	do	do	38
Jan. 17, 1882	do	do	34
Nov. 18, 1895	do	Below Pioneer canal	28.4
Sept. 2, 1900	do	do	4.7
Oct. 3, 1902	do	do	8.2
Oct. 3, 1902	do	1 mile below intake of canal	.7
July 19, 1901	do	do	19.8
Sept. 2, 1900	do	At headworks of Pioneer canal	9.05
Oct. 3, 1902	do	do	14
May 23, 1901	do	6 miles west of Portersville	152
June 28, 1901	do	14 miles above Portersville	165
Apr. 18, 1901	do	At McFarlands Bridge	233
May 22, 1901	do	do	338
June 10, 1901	do	do	311
June 28, 1901	do	do	148
July 29, 1901	do	do	30

Miscellaneous measurements in Tule River drainage basin—Continued.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
Oct. 18, 1901	Tule River	At McFarlands Bridge	18
Dec. 9, 1901	do	do	58
Feb. 5, 1902	do	do	43
Mar. 8, 1902	do	do	156
May 15, 1902	do	do	371
Oct. 2, 1902	do	do	15
Sept. 27, 1905	Tule River, Middle Fork	2 miles above Springville	23
Sept. 30, 1902	Tule River, Middle Fork, North Fork of.	Below Doyle's headworks	2.6
Sept. 30, 1902	do	100 yards above head of Doyle's ditch	14
Oct. 1, 1902	do	Near junction with South Fork of Middle Fork.	24
Sept. 27, 1905	do	do	12.9
Oct. 1, 1902	Tule River, Middle Fork, South Fork of.	100 yards above mouth	15
Oct. 3, 1902	do	At trail crossing, Nelsons to Indian Reservation.	10
Sept. 27, 1905	do	100 feet above mouth	8.8
Sept. 26, 1905	Tule River, North Fork	½ mile above junction with Middle Fork	.0
Oct. 2, 1902	Tule River, South Fork	6 miles below Indian agency	3
Oct. 3, 1902	do	Near Tom Wheaton's ranch	3.2
June 10, 1901	do	do	47.3
July 29, 1901	do	do	.5
May 15, 1902	do	do	103
Oct. 3, 1902	do	Near junction with Tule River	.0
June 9, 1903	do	do	35
Feb. 2, 1904	do	do	7
May 19, 1905	do	do	90
Sept. 26, 1905	do	do	.0
May 26, 1906	do	do	644
July 26, 1906	do	do	64
Oct. 9, 1910	Bear Creek	At mouth, near Daunt	.2
June 24, 1901	Canal, Lower Tule	At Tulare Lake	198
Nov. 18, 1895	Canal, Pioneer	Near Portersville	32
Sept. 1, 1898	do	do	6
Sept. 5, 1899	do	200 feet below headworks	13.1
Sept. 5, 1899	do	1 mile below headworks	8.43
Sept. 5, 1899	do	2 miles below headworks	7.06
Sept. 2, 1900	do	Near Portersville	4.3
Oct. 3, 1902	do	do	4
Oct. 3, 1902	Canal, Pioneer	At headworks	14
Oct. 3, 1902	do	1 mile below headworks	7
Jan. 25, 1911	Rancheria Creek	Near mouth, 300 feet above gage on Bear Creek, about 8 miles northeast of Daunt.	29
Mar. 14, 1911	do	do	13
May 28, 1912	do	do	2.1
Aug. 20, 1910	Tule ditch	Opposite gaging station on Tule River, near McFarland's ranch.	1.6

Miscellaneous measurements in Kaweah River drainage basin.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
July 14, 1881	Kaweah River	At Mrs. Homer's ranch, sec. 33, T. 17 S., R. 28 E.	600
Jan. 16, 1882	do	do	107
Nov. 20, 1895	do	Above Kaweah Irrigation & Power Co.'s	70
Sept. 1, 1898	do	do	35
Sept. 6, 1899	do	do	41
Sept. 3, 1900	do	do	100
Nov. 20, 1895	do	Iron bridge, wagon road	.0
Sept. 1, 1898	do	do	18
Sept. 6, 1899	do	do	33
Sept. 3, 1900	do	1,000 feet below iron bridge	72
Oct. 20, 1901	do	do	52
Sept. 27, 1902	do	½ mile above iron bridge	33
Aug. 31, 1898	do	Southern Pacific branch railroad bridge	.0
Sept. 27, 1902	Kaweah River, East Fork	Above headworks of Mount Whitney power plant.	15
Sept. 12, 1902	do	do	18
Aug. 26, 1903	do	do	23
Sept. 16, 1904	do	do	34
Sept. 27, 1902	do	Below headworks of power plant	15.5
Sept. 28, 1902	do	100 yards below trail from Soldiers' camp to Tar Gap.	11

Miscellaneous measurements in Kaweah River drainage basin—Continued.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
Aug. 26, 1903	Kaweah River, East Fork	At Mineral King	5.3
Sept. 27, 1902	Kaweah River, Marble Fork	100 yards above junction with Middle Fork.	4
Oct. 12, 1905	do	do	5
Aug. 30, 1903	do	At bridge, Sequoia Park	8.7
Sept. 19, 1904	do	do	4.7
Sept. 27, 1902	Kaweah River, Middle Fork	100 yards above junction with Marble Fork.	20
Sept. 18, 1904	do	do	23
Oct. 12, 1905	do	do	16.3
Sept. 10, 1902	do	¼ mile inside Sequoia National Park	31
Sept. 26, 1902	do	do	29
Sept. 30, 1902	do	3 miles above Three Rivers	31
Sept. 22, 1904	do	800 feet above intake of Mount Whitney Power Co.'s canal.	27
Sept. 1, 1898	Kaweah River, North Fork	At mouth	.3
Sept. 6, 1899	do	do	1.1
Sept. 25, 1902	do	Lower end of Davis ranch	4.3
Aug. 28, 1903	do	3 miles above Three Rivers	7.3
Sept. 20, 1904	do	300 feet above intake of Schreiber's ditch	6
Oct. 13, 1905	do	5 miles above junction of South and Middle Forks.	4.8
Sept. 6, 1899	Kaweah River, South Fork	At mouth	1.2
Sept. 25, 1902	do	200 yards above bridge on road to Visalia	.7
Sept. 29, 1902	do	Lower end of Sand Meadows	2
Sept. 29, 1902	do	At Sequoia National Park line	9.8
Sept. 15, 1904	do	9½ miles above junction with Middle Fork	7.1
Oct. 11, 1905	do	2 miles above junction with Grouse Creek	4.3
Mar. 11, 1911	do	Bridge below Three Rivers, SW. ¼ sec. 26, T. 17 S., R. 28 E.	302
Mar. 12, 1911	do	do	221
May 19, 1911	do	do	229
Sept. 18, 1911	do	Above Maxon ranch near Three Rivers, sec. 15, T. 18 S., R. 29 E.	6.0
Sept. 1, 1898	Canals	South Fork of Kaweah River	.0
Sept. 6, 1899	do	do	.7
Sept. 3, 1900	Canal, Watumna	At headgate	15
Oct. 20, 1901	do		5
Nov. 23, 1911	Ditch, Mehrtens	Near Three Rivers	.5
Sept. 3, 1900	Ditch, Myers	Above Pogues upper ditch	1
Aug. 31, 1898	Ditch, Pogues lower		8.5
Sept. 6, 1899	do		1.5
Sept. 3, 1900	do		8.1
Oct. 20, 1901	do		5
Aug. 31, 1898	Ditch, Pogues upper		4.5
Sept. 6, 1899	do		4.9
Sept. 3, 1900	do		6.7
Aug. 31, 1903	Dorst Creek	At North Fork trail crossing	2.6
Sept. 28, 1905	Flume, Mt. Whitney Power Co.'s	100 feet below headgate	17.2
Oct. 12, 1905	do	do	18.9
Sept. 29, 1902	Horse Creek	Lower end Hackett Meadows	1
Aug. 31, 1903	Stony Creek	North Fork trail crossing	1.2

Miscellaneous measurements in Kings River drainage basin.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
June 24, 1881	Kings River	At Slate Point in sec. 18, T. 13 S., R. 24 E.	5,140
Nov. 1, 1881	do	do	330
Jan. 20, 1882	do	do	366
June 26, 1881	do	At Brewer's cabin, ¾ mile above Slate Point.	6,050
July 26, 1881	do	4 miles above Brewer's cabin	1,820
Nov. 19, 1883	do	½ mile below Slate Point	266
Jan. 19, 1882	do	At Kingsburgh	59
Nov. 22, 1883	do	do	119
Aug. 15, 1885	do	do	158
June 19, 1900	do	300 feet below mouth of Tenmile Creek	11.6
Oct. 20, 1900	do	Below junction of Middle and South Forks.	346
Sept. 25, 1902	do	1 mile north of Reedly	74
Sept. 3, 1903	do	½ mile below mouth of North Fork	332
Aug. 26, 1900	Kings River, Middle Fork	At Tehipiti	153
Sept. 18, 1902	do	At Simpson Meadows	75
Aug. 28, 1905	do	Above mouth of Horseshoe Creek	119
Sept. 22, 1902	Kings River, North Fork	At mouth	35
Sept. 3, 1903	do	do	32

Miscellaneous measurements in Kings River drainage basin—Continued.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
Aug. 22, 1905	Kings River, North Fork	500 feet above mouth	30
Aug. 31, 1905	do	15 miles above mouth	9.4
Aug. 19, 1900	do	Dusy Meadows	4.3
Sept. —, 1900	do		15
Sept. 18, 1902	do	100 yards above trail crossing	7.2
Sept. 20, 1910	do	19 miles east and 6 miles south of Ockenden	1.7
Sept. 22, 1902	Kings River, South Fork	100 yards below trail crossing	29
Aug. 26, 1905	do	¼ mile above mouth of Lewis Creek	139
Aug. 26, 1905	do	700 feet above mouth of Bubbs Creek	49
Aug. 26, 1905	do	¼ mile below mouth of Bubbs Creek	99
Sept. 18, 1902	Creek	Below Crown Meadows	3
Sept. 17, 1902	Bear Creek		1.5
Aug. 31, 1905	do	2 miles above junction with Dinkey Creek	.7
Sept. 18, 1902	Blue Canyon Creek		2
Aug. 29, 1905	do	200 feet above mouth	1.4
June 20, 1900	Boulder Creek	At upper trail crossing	21.7
Aug. 25, 1905	do	2 miles above mouth	3.2
Sept. 22, 1902	Bubbs Creek	100 yards above junction	32
Aug. 26, 1905	do		50
May 19, 1903	Canal, Crescent	Near Wheatville	38
May 13, 1903	Canal, Centerville and Kingsburg	200 feet below Trimmer Spring road bridge	727
Sept. 22, 1902	Canal, Enterprise	do	2
Sept. 4, 1899	Canal, Fowler Switch	Near head	.0
Sept. 24, 1902	do	do	.0
May 13, 1904	do	200 feet below road bridge	476
May 14, 1904	do	do	588
Sept. 4, 1899	Canal, Gould	Near head	2
Sept. 4, 1900	do	do	84
Sept. 27, 1900	do	do	1
May 13, 1904	do	½ mile below headgate	260
Sept. 4, 1899	Canal, Kingsburg	At head	.3
Sept. 4, 1900	do	do	.0
Sept. 24, 1902	do	At road crossing	4.8
May 17, 1903	Canal, Lagunada de Tacahe	At Laton	227
May 16, 1903	Canal, Liberty	At Lemoore road crossing	55
May 17, 1903	Canal, Lower King River	Near Grangeville	180
May 19, 1903	Canal, near Riverdale	Above waste	88
May 19, 1903	Canal, Stimson	At Elkhorn road crossing	175
Sept. 4, 1899	Canal, '76	At head	.0
Sept. 4, 1900	do	do	.0
Sept. 24, 1902	do	At Trimmer Springs road crossing	31
May 14, 1903	do	At bridge, near Carmelita	676
Aug. 23, 1905	Converse Creek	200 feet above mouth	1.2
Sept. 22, 1902	Copper Creek		1.5
Aug. 26, 1905	do	¼ mile above mouth	.82
Sept. 18, 1902	Crown Creek		5
Aug. 29, 1905	do	500 feet above mouth	8
Sept. 17, 1902	Deer Creek		1.5
Sept. 17, 1902	Dinkey Creek	75 yards below bridge	3.5
Sept. 1, 1905	do	1½ miles above mouth	2.8
Aug. 31, 1898	Ditch, Church (Fresno canal)	Near head	164
Sept. 4, 1899	do	do	151
Sept. 4, 1900	do	do	229
Sept. 24, 1902	do	At road crossing	121
May 13, 1903	do	Near King River post office	1,040
May 14, 1903	Ditch, Emigrant	Near headworks	114
May 17, 1903	Ditch, Last Chance	Near Laton	297
May 20, 1903	Ditch, Millrace	Near head	20
May 17, 1903	Ditch, Peoples	300 feet below headgate	483
May 19, 1903	Ditch, Reed	Near head	28
May 19, 1903	Ditch, Turner	do	8
Aug. 29, 1905	Dougherty Creek	300 feet above mouth	3.8
Aug. 28, 1905	Goddard Creek	¼ mile above mouth	56
Sept. 22, 1902	Granite Creek	50 yards above trail crossing	.7
Aug. 26, 1905	do	At mouth	.5
May 16, 1903	Heinlen Cut	50 feet above regulating weir	1,298
Aug. 28, 1905	Horseshoe Creek	At mouth	2.4
Aug. 26, 1905	Hotel Creek	do	.2
Aug. 31, 1905	Laurel Creek	¼ mile above junction with Bear Creek	.4
Aug. 26, 1905	Lewis Creek	500 feet above mouth	2.7
Aug. 25, 1905	Lightning Creek	1 mile above mouth	.6
May 23, 1900	Mill Creek	Sec. 13, T. 13 S., R. 24 E	6.8
Aug. 31, 1905	Rancheria Creek	Below junction with North Fork	5.6
Aug. 31, 1905	Rancheria Creek, North Fork	100 feet above mouth	2.4
Sept. 23, 1902	Roaring Creek	At trail crossing	11
Aug. 26, 1905	do	500 feet above mouth	9.6
Aug. 26, 1905	Sheep Creek	At mouth	1.8
Aug. 29, 1905	Slide Creek	3 miles below Simpson Meadows	.5
Aug. 23, 1905	Tenmile Creek	100 feet above mouth	1.1
May 16, 1903	Zelda Canal Slough	1,500 feet below Lemoore road	5,420

Miscellaneous measurements of Kings River canals, in 1882–83.

Date.	Canal.	Locality.	Discharge.
			Sec.-ft.
Jan. 20, 1882	Kings River and Fresno canal		151
June —, 1882	do		134
Jan. 20, 1882	Fresno canal		157
June —, 1882	do		381
Jan. 20, 1882	Centerville and Kingsburg canal		42
June 29, 1882	do		346
Nov. 19, 1883	do		97
July 7, 1882	Emigrant canal		92
July 11, 1882	Peoples canal		92

Miscellaneous measurements in Merced River drainage basin.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
June 15, 1881	Merced River	5 miles above Livingston	2,460
Aug. 5, 1881	do	do	197
Jan. 17, 1882	do	do	126
Aug. 4, 1881	do	At Livingston	230
Sept. 27, 1882	do	do	42
Nov. 15, 1883	do	do	82
Nov. 15, 1883	do	do	98
Sept. 11, 1899	do	Above headworks of Crocker-Hoffman Canal.	35.5
Sept. 11, 1899	do	Above headworks of Crocker-Hoffman Canal (total flow).	40.5
Sept. 25, 1894	do	Sec. 6, T. 4 S., R. 17 E., Mount Diablo meridian.	135
Sept. 20, 1899	do	do	64
Sept. 10, 1895	do	Sec. 36, T. 3 S., R. 16 E., M. D. M	680
Mar. 25, 1899	do	Sec. 22, T. 3 S., R. 16 E., M. D. M	4,000
Oct. 20, 1899	do	do	1,050
Aug. 22, 1896	do	Yosemite Valley	89
June 24, 1903	do	do	1,135
Sept. 15, 1903	do	do	27
July 16, 1911	do	At Yosemite	2,550
Aug. 18, 1911	do	do	269
Nov. 22, 1900	do	Over crest of Nameless Mining Co.'s dam	20,228
Oct. —, 1901	do	Over weir during construction of Mas. C. & M. Co.'s dam.	67
Sept. 3, 1902	do	150 yards above mouth of Illilouette Creek	33
Sept. 1, 1902	do	1,000 feet above Merced Falls	78
Aug. 31, 1902	do	At Horseshoe Bend	97
Sept. 4, 1902	Merced River, South Fork	At Wawona	3.2
Aug. 22, 1911	do	½ mile west of Wawona	27
Aug. 12, 1903	do	1,000 feet below Wawona Bridge	1.5
Nov. 6, 1910	do	Below junction with Big Creek	20
Nov. 6, 1910	do	Above junction with Big Creek	10
Sept. 13, 1903	Alder Creek		1
Sept. 11, 1903	Big Creek	At Summerdale	3.2
Aug. 22, 1911	do	½ mile west of Wawona	20
Aug. 4, 1902	Bridal Veil Creek	Below bridge in Yosemite Valley	2
June 25, 1903	do	do	20
Sept. 15, 1903	do	do	2
June 7, 1905	do	500 feet above mouth	100
Sept. 11, 1899	Canal, Crocker-Hoffman	300 feet below headworks	16.5
Sept. 10, 1900	do	do	6.5
Sept. 4, 1902	do	3 miles below Snelling	37

Miscellaneous measurements in Merced River drainage basin—Continued.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
Sept. 10,1900	Canal, Merced River Mills	2 miles below Snelling	27
Sept. 12,1902	Canal, Miller & Lux	Intake, No. 3	260
Sept. 12,1902	do	At canal bridge, No. 2	265
June 6,1905	Cascade Creek	Near mouth	150
Sept. 1,1902	Ditch	Below powerhouse at Merced Falls	15
Sept. 11,1899	Ditch, Old Mill Valley		5
Sept. 11,1899	Ditch, Snelling		.5
Sept. 10,1900	do		2.1
Sept. 11,1903	Ditch, Sugar Pine	South Fork Merced River	2.3
Sept. 12,1903	Ditch, Washburn	do	1.9
Aug. 30,1902	Flume, Benton Mills		76
Sept. 3,1900	Flume, Nameless Mining Co.'s dam.		55
Sept. 3,1902	Illilouette Creek	100 yards above mouth	6.2
June 25,1903	do	Near mouth	228
Sept. 15,1903	do	do	3.9
June 7,1905	Ribbon Falls Creek	At road crossing	17
Sept. 3,1902	Tenaya Creek	50 yards above bridge	2.7
June 25,1903	do	Tassaack Avenue bridge	159
Sept. 15,1903	do	do	3
July 16,1911	do	Near Yosemite	325
Aug. 19,1911	do	do	11
June 24,1903	Yosemite Creek	At bridge below falls	119
Sept. 15,1903	do	do	.2
July 16,1911	do	Near Yosemite	227
Aug. 18,1911	do	do	12

Miscellaneous measurements in Tuolumne River drainage basin.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
June 11,1881	Tuolumne River	At Modesto	3,700
Aug. 8,1881	do	do	356
Jan. 14,1882	do	do	373
Nov. 12,1883	do	do	254
July 31,1899	do	Below Rancheria Creek	238
Aug. 5,1899	do	do	230
Aug. 12,1899	do	do	131
Aug. 19,1899	do	do	101
Aug. 23,1899	do	do	69
July 13,1901	do	Above Rancheria Creek	1,849
Aug. 26,1901	do	do	160
Sept. 28,1901	do	do	120
Oct. 11,1901	do	do	60
Sept. 18,1905	do	do	22
Sept. 2,1902	do	Lower end of Tuolumne Meadows	23
July 18,1911	do	At highway bridge in Tuolumne Meadows	1,250
Aug. 25,1902	do	Jacksonville	22
Aug. 28,1902	do	do	150
Aug. 26,1902	do	Wards Ferry	159
Aug. 29,1902	do	Upper end of Hetch Hetchy Valley	66
Sept. 18,1902	do	do	19
Aug. 25,1910	do	do	105
Aug. 29,1902	do	Lower end of Hetch Hetchy Valley	89
Sept. 18,1902	do	do	23
Sept. 21,1905	do	do	24
Aug. 25,1910	do	At dam site in Hetch Hetchy Valley	115
Aug. 27,1902	do	½ mile above mouth of South Fork	152
Aug. 28,1911	do	do	9.5
Sept. 13,1910	do	50 feet above mouth of South Fork	46
Aug. 31,1902	Tuolumne River, Middle Fork	100 yards below bridge	3
Sept. 21,1905	do	do	.56
Sept. 17,1902	do	6 miles from Sequoia post office	.8
Aug. 22,1902	Tuolumne River, North Fork	At headworks Goldwin Mining Co.'s canal	6
Sept. 21,1903	do	Above mouth of Basin Slope Creek	2.9
Aug. 27,1902	Tuolumne River, South Fork	½ mile above mouth	20
Sept. 17,1903	do	1 mile above Sequoia post office	7.7
Aug. 28,1911	do	Just above sawmill at Sequoia, Cal	23
Apr. 15,1896	Canal, Lagrange Ditch & Hydraulic Mining Co.'s.	Near Lagrange	32
May 29,1897	do	do	22
Oct. 30,1897	do	do	6.2

Miscellaneous measurements in Tuolumne River drainage basin—Continued.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
Dec. 20, 1897	Canal, Lagrange Ditch & Hydraulic Mining Co.'s.	Near Lagrange	24
Apr. 18, 1898	....do	....do	30
May 31, 1898	....do	....do	26
July 30, 1898	....do	....do	24
Oct. 7, 1898	....do	....do	24
Mar. 3, 1899	....do	....do	24
Apr. 20, 1899	....do	....do	23.5
Apr. 21, 1899	....do	....do	23.5
May 19, 1899	....do	....do	24
June 6, 1899	....do	....do	24
June 29, 1899	....do	....do	24
Aug. 3, 1899	....do	....do	24
Sept. 11, 1899	....do	....do	24
Apr. 5, 1900	....do	....do	24
June 22, 1900	....do	....do	12.5
Aug. 11, 1900	....do	....do	12
Sept. 8, 1900	....do	....do	9
Apr. 7, 1901	....do	....do	7.2
Aug. 31, 1901	....do	....do	4.5
Mar. 6, 1902	....do	....do	5
May 13, 1902	....do	....do	5
Aug. 27, 1902	....do	....do	4
Aug. 27, 1903	....do	....do	4
June 8, 1904	....do	....do	8.5
Aug. 22, 1904	....do	....do	3.7
Sept. 19, 1903	Cherry River	At Eleanor trail crossing	.6
Sept. 17, 1905	....do	....do	.92
Sept. 16, 1905	....do	½ mile above mouth of Eleanor Creek	1.4
Sept. 20, 1903	Clavey River	Above mouth of Twomile Creek	2.6
Sept. 15, 1905	....do	At trail from Tuolumne to Lake Eleanor	12.5
Aug. 26, 1910	Eleanor Creek	½ mile below outlet of Lake Eleanor	3.8
Sept. 19, 1903	....do	At outlet of Lake Eleanor	1.0
Sept. 18, 1905	....do	....do	.3
Aug. 26, 1910	....do	....do	2.6
June 18, 1901	Eleanor Creek, East Branch	At inlet to Lake Eleanor	74
July 16, 1901	....do	....do	23
Aug. 18, 1901	....do	....do	11.6
Aug. 27, 1901	....do	....do	1.5
Oct. 1, 1901	....do	....do	7.4
June 18, 1901	Eleanor Creek, West Branch	....do	226
July 16, 1901	....do	....do	121
Aug. 18, 1901	....do	....do	75
Aug. 27, 1901	....do	....do	6.8
Oct. 1, 1901	....do	....do	47.6
Aug. 12, 1901	Falls Creek		36.5
Sept. 5, 1901	....do	Tiltill trail crossing	9.8
Sept. 19, 1901	....do	....do	3
Oct. 4, 1901	....do	....do	16
Aug. 29, 1902	....do	100 yards above mouth	4
Sept. 19, 1905	....do	At outlet of Lake Vernon	1.2
June 12, 1901	Frog Creek	At inlet to Lake Eleanor	116
July 17, 1901	....do	....do	33
Aug. 18, 1901	....do	....do	5.7
Aug. 27, 1901	....do	....do	1
Oct. 1, 1901	....do	....do	4.9
Apr. 22, 1912	Golden Rock ditch	Above Ranger's station near Hamilton post office.	6.9
Sept. 20, 1903	Hull Creek	Carter-Lake Eleanor trail crossing	3.7
Aug. 24, 1910	Piute Creek	Head of Pleasant Valley	3.2
Aug. 26, 1901	Rancheria Creek	At old sheep bridge	36
Aug. 29, 1902	....do	....do	7
Sept. 18, 1903	....do	At mouth	1.3
Sept. 19, 1905	....do	1½ miles above mouth	3.1
Sept. 19, 1903	Reed Creek	At Rosasco ranch	2.6
Aug. 29, 1902	Tiltill Creek	At trail crossing	.5
Sept. 17, 1903	....do		.2
Sept. 19, 1905	....do	2 miles above mouth	.12
Sept. 20, 1903	Twomile Creek	At mouth	.8
Aug. 25, 1902	Woods Creek	At Jacksonville	22

Miscellaneous measurements in Stanislaus River drainage basin.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
June 8, 1881	Stanislaus River	At Oakdale	2,940
Aug. 11, 1881	do	do	378
Jan. 13, 1882	do	do	283
Nov. 9, 1883	do	do	211
Nov. 20, 1896	do		158
Sept. 13, 1899	do	At Parrots Ferry	70
Aug. 21, 1902	do	do	168
Sept. 12, 1905	do	do	91
Sept. 7, 1900	do	Below intake of Stanislaus Water Co	28
Aug. 22, 1902	do	Below Colliers	193
Aug. 24, 1902	do	Abbotts Ferry	170
Aug. 23, 1902	do	Robinson Ferry	171
Aug. 19, 1902	do	Knights Ferry	166
Sept. 8, 1910	do	Below mouth of North Fork	13
Oct. 25, 1910	do	do	24
Aug. 21, 1902	Stanislaus River, Clarks Fork	At mouth	53
Aug. 21, 1902	Stanislaus River, Middle Fork	Below mouth of Clarks Fork	126
Aug. 21, 1902	do	Above mouth of Clarks Fork	73
Oct. 12, 1899	do	Near mouth of Niagara Creek	144
Sept. 16, 1901	do	North of Shotgun	300
Sept. 26, 1905	do	5 miles above mouth	84
Aug. 17, 1902	Stanislaus River, North Fork	400 feet below suspension bridge	1
Sept. 27, 1905	do	75 yards above trail bridge	77
Sept. 9, 1896	Stanislaus River, South Fork	Sugar Pine	60
Oct. 22, 1896	do	At Strawberry	3
Sept. 25, 1905	do	3 miles north of Confidence	.96
Sept. 26, 1905	Beaver Creek	5 miles above mouth	4.6
Oct. 30, 1896	Canal, Stanislaus and San Joaquin Valley.	At Knights Ferry	38
Feb. 16, 1897	do	Above Knights Ferry	39
May 30, 1897	do	do	66
July 13, 1897	do	do	51
Sept. 6, 1897	do	do	53
Oct. 29, 1897	do	do	35
Dec. 19, 1897	do	do	21
June 1, 1898	do	do	24
June 1, 1898	do	do	44
June 1, 1898	do	do	61
June 1, 1898	do	do	.0
Oct. 5, 1898	do	do	33
May 19, 1899	do	do	73.5
June 6, 1899	do	do	71.4
June 6, 1899	do	do	52.3
June 6, 1899	do	do	30.6
June 6, 1899	do	do	.0
Apr. 17, 1898	Canal, Stanislaus Water Co.'s		58
June 1, 1898	do	Flume No. 3	72
July 29, 1898	do	do	42
Oct. 5, 1898	do		33
Oct. 6, 1898	do		33
May 19, 1899	do	Flume No. 3	74
June 6, 1899	do	do	71
May 9, 1900	do	do	95
May 12, 1902	do	do	129
Sept. 7, 1900	do	At headworks	85
Aug. 17, 1902	do	Below intake	154
Sept. 23, 1903	do	Below penstock	61
Nov. 25, 1903	do	do	41
Nov. 25, 1903	do	Above penstock	85
Oct. 21, 1896	Cascade Creek		.0
Oct. 21, 1896	Cow Creek		.5
Aug. 17, 1902	Ditch, Angel's		67
May 19, 1899	Flume, Oakdale Ditch Co.'s		10.6
May 12, 1902	do	Flume No. 13	36
May 12, 1902	do	Flume No. 6	73
May 12, 1902	do		13.7
Aug. 20, 1902	Flume, Power Co.'s	On South Fork	54
Aug. 20, 1902	do	do	16
Apr. 27, 1912	Flume, Utica Gold Mining Co	Below spillway near headgates about 4½ miles northeast of Avery.	63
Sept. 26, 1905	Griswold Creek	5 miles above mouth	2
Oct. 21, 1896	Mill Creek	Tuolumne County	1.5
Aug. 17, 1902	do	Calaveras County	2.3
Oct. 21, 1896	Niagara Creek	Tuolumne County	1.5

Miscellaneous measurements in Calaveras River drainage basin.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
June 4, 1881	Calaveras River	About 4 miles below Jenny Lind	64
Jan. 12, 1882	....do	....do	112

Miscellaneous measurements in Mokelumne River drainage basin.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
June 2, 1881	Mokelumne River	At Magee's Bridge at Clements	3,330
Aug. 15, 1881	....do	....do	38
Jan. 11, 1882	....do	....do	352
Sept. 14, 1899	....do	Mokelumne Hill	33
Sept. 12, 1900	....do	....do	15
Oct. 13, 1911	....do	....do	223
Aug. 12, 1902	....do	At Woodbridge	33
Aug. 13, 1902	....do	¼ mile below Lancha Plana dam	67
Aug. 15, 1902	....do	....do	126
Aug. 14, 1902	....do	At Clements	65
Sept. 22, 1911	....do	Above power house of Pacific Gas and Electric Co. at Electra.	[a] 44
Sept. 22, 1911	....do	Below power house of Pacific Gas & Electric Co. at Electra.	[a] 253
Oct. 12, 1911	....do	Above power house of Pacific Gas & Electric Co. at Electra.	51
Aug. 15, 1902	Mokelumne River, Middle Fork	Near West Point	1.7
Sept. 23, 1911	....do	1½ miles south of West Point	9.3
Aug. 15, 1902	Mokelumne River, North Fork	Near West Point	61
Sept. 23, 1911	....do	1½ miles northwest of West Point	7.4
Sept. 23, 1911	Mokelumne River, South Fork	About 2 miles northeast of Glencoe	31
Oct. 11, 1911	....do	1 mile north of Railroad Flat	16
Oct. 11, 1911	Mokelumne River, Licking Fork	1½ miles north of Railroad Flat	11
Aug. 14, 1902	Canal, Standard Power	Near Electra, at flume No. 59	53
Aug. 12, 1902	Canal, Woodbridge	At head	40
Aug. 16, 1902	....do	....do	29
Aug. 12, 1900	Ditch, Amador	At Camp Tabeaud	37
Aug. 14, 1902	....do	¼ mile above tunnel	51
Sept. 12, 1900	Ditch, Butte	Above Electra	4.8
Aug. 15, 1902	Ditch, Mokelumne	500 feet below headgate	21
Aug. 16, 1902	....do	2 miles southeast of Fort Mountain	4.8
Oct. 6, 1911	Dry Creek	Below mouth of Jackson Creek, 7 miles southwest of Ione.	8.1
Oct. 10, 1911	Flume, upper	2½ miles northwest of West Point	129
Oct. 10, 1911	Flume, lower	....do	54
Oct. 6, 1911	Jackson Creek	At mouth, 7 miles southwest of Ione	.0
Oct. 8, 1911	Sutter Creek	At dam site, about ½ mile below Volcano	3.5
Oct. 8, 1911	....do	....do	3.3

[a] The difference in the discharge below and above the power house, 209 second-feet, is the amount of water in the power canal at Electra.

Miscellaneous measurements in Cosumnes River drainage basin.

Date.	Stream.	Locality.	Discharge.
			Sec.-ft.
Sept. 16, 1899	Cosumnes River	Bridge near Latrobe-Jackson road	2
Sept. 12, 1900	....do	....do	1.7
Sept. 16, 1899	Ditch	On south side of Latrobe-Jackson road	2
Sept. 12, 1900	....do	....do	3.7
Aug. 13, 1911	Cosumnes River	Below North Fork of Cosumnes River, at Huse Bridge.	35
Oct. 12, 1911	Cosumnes River, Middle Fork	At Bakers Ford	19
Aug. 12, 1911	Cosumnes River, North Fork	At Bucks Bar	25
Aug. 13, 1911	Cosumnes River, South Fork	Just above junction with North Fork, at Huse Bridge.	12

INDEX.

A. Page.

Abbots Ferry, Cal.—
Stanislaus River at:
discharge ... 420
Acknowledgments to those aiding ... 9–10
Acre-foot, definition of ... 29
Accuracy of measurements, degree of ... 30–31, 40–41
Alder Creek—
discharge ... 417
Ant Creek—
(at) mouth, Cal.:
discharge ... 44
Avery. *See* Sand Bar Flat.

B.

Bakersfield, Cal.—
Kern River near:
description ... 85
discharge ... 86
discharge, daily ... 86–94
discharge, monthly ... 94–97
Bakers Ford, Cal.—
Middle Fork of Cosumnes River at:
discharge ... 421
Basin Creek—
(near) Havalah, Cal.:
description ... 105–106
discharge ... 106
discharge, daily ... 107–108
discharge, monthly ... 108
gage heights ... 106–107
(at) Rankin's ranch:
discharge ... 44
Basin Slope Creek mouth, Cal.—
North Fork of Tuolumne River at:
discharge ... 418
Bear Creek (of Kings River)—
(above) Dinkey Creek mouth:
discharge ... 416
Bear Creek (of San Joaquin River)—
(at) foothills, Cal.:
description ... 215
discharge, monthly ... 216–217
discharge per square mile ... 37–39
(near) mouth, Cal.:
discharge ... 410
Bear Creek (of Tule River)—
(near) Daunt, Cal.:
discharge ... 414
(near) Springville, Cal.:
description ... 136
discharge ... 136
gage heights ... 137
Bear Creek junction, Cal.,
Laurel Creek near:
discharge ... 416
Beaver Creek—
(near) mouth:
discharge ... 420

Bellota, Cal., Page.
Calaveras River near:
description ... 367–368
discharge, monthly ... 368–369
discharge per square mile ... 37–39
Bennett, S. G., work of ... 10
Big Creek (of Kings River)—
(near) Tollhouse, Cal.:
description ... 188
discharge ... 188
discharge, daily ... 189–190
discharge, monthly ... 190
gage heights ... 189
Big Creek (of Merced River)—
(at) Summerdale, Cal.:
discharge ... 417
(near) Wawona, Cal.:
description ... 248–249
discharge ... 249, 417
gage heights ... 249
Big Creek (of San Joaquin River)—
(at) Eastwood dam site, Cal.:
discharge ... 410
(above and below) Home Camp Creek, Cal.:
discharge ... 410
(near) Shaver, Cal.:
description ... 192
discharge, daily ... 192–193
discharge, monthly ... 193–194
Big Creek mouth, Cal.,
South Fork of Merced River near:
discharge ... 417
Big Shuteye trail, Cal.:
Chiquito Creek at.:
discharge ... 410
Blaney Meadows, Cal.,
South Fork of San Joaquin River at:
discharge ... 410
Blue Canyon Creek:
discharge ... 416
Boulder Creek:
discharge ... 416
Bridal Veil Creek—
(near) mouth:
discharge ... 417
(in) Yosemite Valley, Cal.:
discharge ... 417
Bridge, measurement from, view of ... 28
Brush Creek—
(above) mouth of North Fork:
discharge ... 411
Brush Creek (North Fork)—
discharge ... 411
Bubbs Creek—
discharge ... 416
Bubbs Creek, falls on, view of ... 156

Bubbs Creek mouth, Cal., Page.
South Fork of Kings River above:
discharge..... 416
Buchanan, Cal.,
Chowchilla Creek near:
description..... 211-212
discharge, monthly..... 212-213
discharge per square mile..... 37-39
Bucks Bar, Cal.,
North Fork at Cosumnes River at:
discharge..... 421
Bull Run Creek—
(near) mouth:
discharge..... 411

C.

Calaveras River, basin of, miscellaneous measurements..... 421
description..... 26-27
Calaveras River—
(near) Bellota, Cal.:
description..... 367-368
discharge, monthly..... 368-369
discharge per square mile..... 37-39
(at) Jenny Lind, Cal.:
description..... 359-360
discharge..... 360
discharge, daily..... 363-366
discharge, monthly..... 366-367
gage heights..... 361-363
(near) Jenny Lind, Cal.:
discharge..... 421
Caliente Creek—
(at) foothills, Cal.:
description..... 104
discharge, monthly..... 104-105
discharge per square mile..... 37-39
(near) mouth:
discharge..... 411
California, northern, relief map of..... 10
California State Board of Control, duties of. 9
California State Engineering Department, gaging by..... 35-42
work of..... 9
Camp Tabeaud, Cal.,
canal near:
discharge..... 421
Carmelita, Cal.,
canal near:
discharge..... 416
Cascade Creek—
discharge..... 420
Cascadel Creek—
(near) Cascadel ranch, Cal.:
discharge..... 410
(near) North Fork, Cal.:
description..... 203
discharge, daily..... 203-204
discharge, monthly..... 204-205
Cherry River—
(near) Eleanor Creek mouth:
discharge..... 419
(at) Eleanor trail crossing, Cal.:
description..... 305
discharge..... 305, 419
discharge, monthly..... 305
gage heights..... 305

Chiquita San Joaquin— Page.
(at and near) mouth, Cal.:
discharge..... 410
Chiquita San Joaquin mouth, Cal.,
San Joaquin River below:
discharge..... 410
Chiquito Creek—
(at) Big Shuteye trail, Cal.:
discharge..... 410
Chowchilla Creek—
(near) Buchanan, Cal.:
description..... 211-212
discharge, monthly..... 212-213
discharge per square mile..... 37-39
Clapp, W. B., work of..... 10
Clark Creek—
(at) Dry Meadows, Cal.:
discharge..... 411
Clarks Fork—
(at) mouth:
discharge..... 420
Clarks Fork mouth, Cal.:
Middle Fork of Stanislaus River near:
discharge..... 420
Clavey River—
(above) Twomile Creek mouth, Cal.:
discharge..... 419
(near) Tuolumne, Cal.:
description..... 312
discharge..... 312, 419
gage heights..... 313
Clear Creek—
(at) mouth:
discharge..... 411
Clear Creek mouth, Cal.,
Kern River below:
discharge..... 411
Clements, Cal.,
Mokelumne River at:
discharge..... 421
Mokelumne River near:
description..... 374-375
discharge..... 375
discharge, daily..... 381-382
discharge, monthly..... 383-384
gage heights..... 376-379
rating table..... 380
Colliers, Cal.,
Stanislaus River below:
discharge..... 420
Columbia, Cal.,
South Fork of Stanislaus River near:
description..... 358
discharge..... 358
gage heights..... 359
Confidence, Cal.,
South Fork of Stanislaus River near:
description..... 357
discharge..... 357, 420
gage heights..... 357-358
Cooperation, details of..... 8-10
Corral Creek—
(near) Groveland, Cal.:
description..... 309
discharge..... 309
gage heights..... 309-310

Corral Creek—Continued. Page.
(near) mouth:
discharge..... 411
Cosumnes River, basin of, miscellaneous measurements..... 421
description..... 27
Cosumnes River—
(at) Huse Bridge, Cal.:
discharge..... 421
(at and near) Latrobe-Jackson road:
discharge..... 421
(at) Live Oak suspension bridge:
discharge per square mile..... 37–39
(at) Michigan Bar, Cal.:
description..... 396
discharge..... 396
discharge, daily..... 399–401
discharge, monthly..... 402
gage heights..... 397–399
rating table..... 399
(below) Michigan Bar, Cal.:
description..... 403
discharge, monthly..... 403–404
Cosumnes River (Middle Fork)—
(at) Bakers Ford, Cal.:
discharge..... 421
Cosumnes River (North Fork)—
(at) Bucks Bar, Cal.:
discharge..... 421
(near) El Dorado, Cal.:
description..... 406
discharge..... 406
discharge, daily..... 407–408
discharge, monthly..... 408
gage heights..... 407
(near) Pleasant Valley, Cal.:
description..... 404–405
discharge, daily..... 405
discharge, monthly..... 406
Cosumnes River (South Fork)—
(at) Huse Bridge, Cal.:
discharge..... 421
Cow Creek—
discharge..... 420
Crane Valley reservoir—
(near) North Fork, Cal.:
description..... 199
discharge, daily..... 200
discharge, monthly..... 201
Crown Meadows, Cal.,
creek at:
discharge..... 416
Current meters, view of..... 28

D.

Data, accuracy of..... 30–31, 40–41
explanation of..... 29–30
field methods for collection of..... 27–28, 40–41
Daunt, Cal.,
Bear Creek near:
discharge..... 414
Ranchcria Creek near:
discharge..... 414
Davis, A. P., work of..... 9
Deer Creek— Page.
(at) foothills, Cal.:
description..... 116
discharge, monthly..... 116–117
discharge per square mile..... 37–39
(at) Hot Springs, Cal.:
description..... 117–118
discharge..... 118
discharge, daily..... 119–120
discharge, monthly..... 120
gage heights..... 118–119
Definitions of terms used..... 28–29
Democrat Springs, Cal.,
Kern River near:
discharge..... 411
Devils Post Pile, Cal.,
Middle Fork of San Joaquin River at:
discharge..... 410
Mingret Creek near:
discharge..... 410
Soda Creek near:
discharge..... 410
Dinkey Creek—
(near) Ockenden, Cal.:
description..... 186
discharge..... 187
discharge, daily..... 187–188
discharge, monthly..... 188
gage heights..... 187
Dinkey Creek mouth, Cal.,
Bear Creek above:
discharge..... 416
Discharge, definition of..... 29
measurement of..... 30, 40–41
accuracy of..... 30–31, 40–41
Discharges per square mile, table showing... 37–39
Dorst Creek—
(at) North Fork trail:
discharge..... 415
Dougherty Creek—
(near) mouth:
discharge..... 416
Drainage, description of..... 11–12, 18–27
work of..... 15–16
Dry Creek—
(at) foothills, Cal.:
description..... 394
discharge, monthly..... 394–395
discharge per square mile..... 37–39
Dry Creek—
(near) Ione, Cal.:
description..... 393
discharge..... 393, 421
gage heights..... 393–394
Dry Meadows, Cal.:
Clark Creek at:
discharge..... 411
Jackson Creek at:
discharge..... 412
Wade Creek at:
discharge..... 412
Dusy Meadows, Cal.,
North Fork of Kings River at:
discharge..... 416

E.

Page.

El Dorado, Cal.,
North Fork of Cosumnes River near:
description 406
discharge 406
discharge, daily 407–408
discharge, monthly 408
gage heights 407
Eleanor Creek—
(at) Eleanor trail crossing:
description 306
discharge 306
discharge, monthly 307
gage heights 306
(at) Lake Eleanor, Cal.:
discharge 419
Eleanor Creek (East Branch)—
(at) Lake Eleanor, Cal.:
discharge 419
Eleanor Creek (West Branch)—
(at) Lake Eleanor, Cal.:
discharge 419
Eleanor Creek mouth, Cal.,
Cherry River near:
discharge 419
Eleanor trail crossing, Cal.,
Cherry River at:
description 305
discharge 305, 419
discharge, monthly 305
gage heights 305
Eleanor Creek at:
description 306
discharge 306
discharge, monthly 307
gage heights 306
Electra, Cal.,
canal near:
discharge 421
Mokelumne River at:
description 369
discharge 370, 421
discharge, monthly 372
gage heights 370–371
rating table 371–372
Elkhorn Road, Cal.,
canal at:
discharge 416
Emigdio Creek—
(in) Kern County, Cal.:
description 110
discharge, monthly 111
Equivalents, table of 32–33
Erskine Creek—
(near) Isabella, Cal.:
description 101
discharge 101
discharge, daily 102–103
discharge, monthly 103
gage heights 101–102

F.

Falls Creek—
(at) Lake Vernon, Cal.:
discharge 419
(at) mouth:
discharge 419
(at) Tiltill road, Cal.:
discharge 419

Page.

Field methods, accuracy of 30–31
description of 27–28
Fish Creek—
(above) mouth, Cal.:
discharge 410
Fort Mountain, Cal.:
canal near:
discharge 421
Fresno Flats, Cal.
Nelder Creek near:
description 209
discharge 209
gage heights 210
Fresno River, description 24–25
Fresno River—
(at) foothills, Cal.:
description 205
discharge, monthly 205–206
discharge per square mile 37–39
(near) Knowles, Cal.:
description 207
discharge 207
discharge, daily 208
discharge, monthly 209
gage heights 207, 208
Fresno River (North Fork)—
(near) Sugar Pine, Cal.:
description 211
discharge 211
gage heights 211
Friant, Cal.—
canal near:
discharge 410
San Joaquin River near:
description 44
discharge 45, 409
discharge, daily 48–49
discharge, monthly 50
gage heights 45–47
rating table 47
Frog Creek—
(at) Lake Eleanor:
discharge 419

G.

Gage, automatic, view of 28
Gage heights, reading of 29
Gaging car, view of 28
Gaging stations, description of 27–28
list of 33–35
views of 28, 156
Geography of San Joaquin basin, description of 10–12
Geology of San Joaquin basin, description of 12, 16
Glencoe, Cal.,
South Fork of Mokelumne River near:
discharge 421
Goddard Creek—
(near) mouth:
discharge 416
Gold, discovery of, due to water development.
Grangeville, Cal.,
canal near:
discharge 416
Granite Creek (of Kings River)—
discharge 416

Granite Creek (of San Joaquin River)— Page.
discharge 410
Grapevine Creek—
(near) Rose Station, Cal.:
discharge 412
Great Valley, description of 10–11
Griswold Creek—
(near) mouth:
discharge 420
Ground waters, character of 14
Grouse Creek junction, Cal.,
South Fork of Kaweah River near:
discharge 415
Groveland, Cal.,
Corral Creek near:
description 309
discharge 309
gage heights 309–310
South Fork of Tuolumne River near:
description 310
discharge 310
gage heights 310–311
Grunsky, C. E., on Tulare Lake 20
work of 9

H.

Hackett Meadows, Cal.,
Horse Creek at:
discharge 415
Hall, W. W., work of 9, 35
Hamptonville, Cal.,
San Joaquin River at:
description 51
discharge, monthly 51–52
discharge per square mile 37–39
Harris Creek—
(at) mouth:
discharge 412
Havalah, Cal.,
Basin Creek near:
description 105–106
discharge 106
discharge, daily 107–108
discharge, monthly 108
gage heights 106–107
canal near:
discharge 412
Herndon, Cal.,
San Joaquin River at:
description 53
discharge 53–54, 409
discharge, monthly 64–66
gage heights 54–63
rating table 63–64
Hetch Hetchy Valley, Cal.,
Tuolumne River in:
discharge 418
Hetch Hetchy Valley dam site, Cal.,
Tuolumne River at:
description 249
discharge 249, 418
discharge monthly 250
gage heights 250
Home Camp Creek mouth, Cal.,
Big Creek above and below:
discharge 410
Home Camp Creek mouth, Cal.—Contd. Page.
Herne Camp Creek above:
discharge 410
Hoopers Mill Bridge, Cal.,
Kern River at:
discharge 411
Horse Creek—
(at) Hackett Meadows, Cal.,
discharge 415
Horse Meadows, Cal.,
Salmon Creek at:
discharge 412
Horseshoe Bend, Cal.,
Merced River at:
discharge 417
Horseshoe Creek—
(at) mouth:
discharge 416
Horseshoe Creek mouth, Cal.,
Middle Fork of Kings River near:
discharge 415
Hotel Creek—
(at) mouth:
discharge 416
Hot Springs, Cal.,
canal near:
discharge 411
Deer Creek at:
description 117–118
discharge 118
discharge, daily 119–120
discharge, monthly 120
gage heights 118–119
Tyler Creek near:
description 121
discharge 121
gage heights 121–122
White River near:
description 114
discharge 115
gage heights 115–116
Hull Creek—
(at) Carter-Lake Eleanor Trail:
discharge 419
Hunter Creek—
(near) Tuolumne, Cal.:
description 316
discharge 316
gage heights 317
Huse Bridge, Cal.,
Cosumnes River at:
discharge 421
South Fork of Cosumnes River at:
discharge 421

I.

Illilouette Creek—
(near) mouth:
discharge 418
Illilouette Creek mouth, Cal.,
Merced River near:
discharge 417
Indian Creek—
(near) Tuolumne, Cal.:
description 314
discharge 314
gage heights 314

Ione, Cal., Page.
Dry Creek near:
description 393
discharge 393, 421
gage heights 393–394
Isabella, Cal.,
canals at and near:
discharge 411–412
Erskine Creek near:
description 101
discharge 101
discharge, daily 102–103
discharge, monthly 103
gage heights 101–102
Kern River and Kern River Power Co.'s canal near:
discharge 82
Kern River at:
description 76–77
discharge 77
discharge, daily 78–79
discharge, monthly 79
gage heights 77–78
South Fork of Kern River near:
description 99
discharge 99, 411
gage heights 100
Isabella-Kernville bridge, Cal.:
Kern River near:
discharge 411

J.

Jackass Creek—
(at) McCreary-Shuteye trail, Cal.:
discharge 410
(above) mouth:
discharge 410
Jackson Creek—
(at) Dry Meadows, Cal.:
discharge 412
Jackson Creek mouth, Cal.,
San Joaquin River, near:
discharge 410
Jacksonville, Cal.,
Tuolumne River at:
discharge 418
Woods Creek at:
discharge 419
Jawbone Creek—
(near) Tuolumne, Cal.:
description 307
discharge 307
gage heights 308
Jenny Lind, Cal.,
Calaveras River at:
description 359–360
discharge 360
discharge, daily 363–366
discharge, monthly 366–367
gage heights 361–363
Calaveras River near:
discharge 421
Jupiter, Cal.:
Knight Creek near:
description 355–356
discharge 356
gage heights 356–357
Jupiter, Cal.—Continued. Page.
Rose Creek near:
description 354
discharge 354
gage heights 354–355

K.

Kaweah Irrigation & Power Co.'s canal mouth, Cal.:
Kaweah River above:
discharge 414
Kaweah River, basin of, miscellaneous measurements 414–415
description 23–24
Kaweah River—
(at) bridges:
discharge 414
(at) Homer's ranch:
discharge 414
(above) Kaweah Irrigation & Power Co.'s canal:
discharge 414
(near) Three Rivers, Cal.:
description 141–142
discharge 142–143
discharge, daily 149–150
discharge, monthly 151–152
gage heights 143–147
rating table 148
(at) Wachumna Hill, Cal.:
description 139–146
discharge, monthly 140–141
discharge per square mile 37–39
Kaweah River (East Fork):
(at) Mineral King, Cal.:
discharge 415
(near) Mount Whitney power plant, Cal.:
discharge 414
(near) Soldier's Camp–Tar Gap trail, Cal.:
discharge 414
Kaweah River (Marble Fork). *See* Marble Fork.
Kaweah River (Middle Fork)—
(near) Marble Fork junction:
discharge 415
(above) Mount Whitney Power Co.'s canal mouth:
discharge 415
(in) Sequoia National Park, Cal.:
discharge 415
(above) Three Rivers, Cal.:
discharge 415
Kaweah River (North Fork)—
(at) Kaweah, Cal.:
description 153
discharge 153
gage heights 153–154
(at) mouth:
discharge 415
(near) South and Middle forks junction:
discharge 415
Kaweah River (South Fork)—
canals near:
discharge 415
(near) Grouse Creek junction:
discharge 415

Kaweah River (South Fork)—Continued. Page.
(near) Middle Fork mouth:
discharge 415
(at) mouth:
discharge 415
(near) Three Rivers, Cal.:
description 154
discharge 155, 415
discharge, daily 155–156
discharge, monthly 156
gage heights 155
(at) Sand Meadows, Cal.:
discharge 415
(at) Sequoia National Park, Cal.:
discharge 415
(near) Visalia, Cal.:
discharge 415
Kaweah River canals, miscellaneous measurements on 415
Kern and Tulare Lake basins:
description 19–24
Kern Lake, Cal.:
Kern River near:
discharge 411
Onemile Creek below:
discharge 412
Kern River, basin of, miscellaneous measurements 411–412
description 21–23
Kern River—
(near) Bakersfield, Cal.:
description 85
discharge 86
discharge, daily 86–94
discharge, monthly 98–97
(below) canyon mouth:
discharge 411
(below) Clear Creek mouth:
discharge 411
(at) Democrat Springs, Cal.:
discharge 411
(at) Hoopers Mill Bridge:
discharge 411
(at) Isabella, Cal.:
description 76–77
discharge 77
discharge, daily 78–79
discharge, monthly 79
gage heights 77–78
(near) Isabella-Kernville bridge:
discharge 411
(above) Kern Lake, Cal.:
discharge 411
(near) Kern River Power Co.'s dam:
discharge 411
(at) Kernville, Cal.:
description 71
discharge, daily 71–74
discharge, monthly 75–76
(above) Kernville, Cal.:
discharge 411
(above) Little Kern River mouth:
discharge 411
(at) Rio Bravo ranch, Cal.:
description 83
discharge 411

Kern River—Continued. Page.
(at) Rio Bravo ranch, Cal.—Continued.
discharge, monthly 84–85
discharge per square mile 37–39
(above) Salmon Creek mouth:
discharge 411
(at or near) South Fork junction:
discharge 411
Kern River (South Fork)—
(near) Isabella, Cal.:
description 99
discharge 99, 411
gage heights 100
(at) Monache Meadows, Cal.:
discharge 411
(at and near) mouth:
discharge 411
(near) Onyx, Cal.:
description 98
discharge 98
gage heights 98–99
(at) Weldon Road:
discharge 411
Kern River and Kern River Power Co.'s canal—
(near) Isabella, Cal.:
discharge, daily 28
Kern River canals, miscellaneous measurements on 412–413
Kern River (South Fork) mouth, Cal.:
Kern River at or near:
discharge 411
Kern River Power Co.'s canal—
(at) Kernville, Cal.:
description 79
discharge 80, 411
discharge, daily 80–81
discharge, monthly 81–82
Kernville, Cal.:
canals at and near:
discharge 411–412
Kern River at:
description 71
discharge, daily 71–74
discharge, monthly 75–76
Kern River above:
discharge 411
Kern River Power Co.'s canal at:
description 79
discharge 80
discharge, daily 80–81
discharge, monthly 81–82
King Creek—
discharge 410
King River (P. O.), Cal.,
canal near:
discharge 416
Kingsburg, Cal.,
Kings River at:
description 177–178
discharge 179, 415
discharge, monthly 186
gage heights 179–185
Kings River, basin of, miscellaneous measurements 415–416
description 24

Kings River— Page.
(at) Kingsburg, Cal.:
description 177–178
discharge 179, 415
discharge, monthly 186
gage heights 179–185
(below) Middle and South Forks junction:
discharge 415
(below) North Fork junction:
discharge 415
(near) Red Mountain, Cal.:
cable station, view 156
(near) Reedly, Cal.:
discharge 415
(near) Sanger, Cal.:
description 157–158
discharge 158–159
discharge, daily 170–171
discharge, monthly 172–175
gage heights 159–167
rating table 167–169
(at and near) Slate Point, Cal.:
description 175–176
discharge 415
discharge, monthly 176–177
discharge per square mile 37–39
(at) Suspension Bridge, Cal.:
description 156–157
discharge 157
gage heights 157
(below) Tenmile Creek mouth:
discharge 415
Kings River (Middle Fork)—
(above) Horseshoe Creek mouth:
discharge 415
(at) Simpson Meadows, Cal.:
discharge 415
(at) Tehipiti, Cal.:
discharge 415
Kings River (North Fork)—
(at) Dusy Meadows, Cal.:
discharge 416
(near) Ockenden, Cal.:
discharge 416
(at and near) mouth:
discharge 415–416
Kings River (South Fork)—
(near) Bubbs Creek mouth:
discharge 416
(above) Lewis Creek mouth, Cal.:
discharge 416
Kings River canals, miscellaneous measurements on 416–417
Knight Creek—
(near) Jupiter, Cal.:
description 355–356
discharge 356
gage heights 356–357
Knights Ferry, Cal.,
Schell ditch at:
discharge 337
Stanislaus & San Joaquin Water Co.'s canal near:
description 328
discharge 328, 420
discharge, daily 333–335
Knights Ferry, Cal.—Continued. Page.
Stanislaus & San Joaquin Water Co.'s canal near—Continued.
discharge, monthly 336–337
gage heights 329–332
rating table 333
Stanislaus River at:
description 318
discharge 319, 420
discharge, daily 325–327
discharge, monthly 339
gage heights 320–324
rating table 324–325
Stanislaus River, Stanislaus River & San Joaquin Water Co.'s canal, and Schell ditch at:
discharge, daily 338–339
discharge, monthly 339–341
Knowles, Cal.,
Fresno River, near:
description 207
discharge 207
discharge, daily 208
discharge, monthly 209
gage heights 207–208

L.

Lagrange Ditch & Hydraulic Mining Co.'s canal near:
discharge 418
Lagrange, Cal.,
Lagrange Water & Power Co.'s canal near:
description 293
discharge 294, 418
discharge, daily 295–296
discharge, monthly 296–297
gage heights 294–295
Modesto canal near:
description 270–271
discharge 271
discharge, daily 277–279
discharge, monthly 279–280
gage heights 271–276
rating table 276–277
Tuolumne River at:
dam at, view 250
description 250–251
discharge 251–252
discharge, daily 264–266
discharge, monthly 267–270
gage heights 252–261
rating table 261–264
Turlock canal near:
description 281
discharge 281–282
discharge, daily 289–292
discharge, monthly 292–293
gage heights 282–287
rating table 287–289
Lagrange Water & Power Co.'s canal—
(near) Lagrange, Cal.:
description 293
discharge 294
discharge, daily 295–296
discharge, monthly 296–297
gage heights 294–295

Lake Eleanor, Cal., Page.
Eleanor Creek at:
discharge 419
Eleanor Creek (East Branch) at:
discharge 419
Eleanor Creek (West Branch) at:
discharge 419
Frog Creek at:
discharge 419
Lake Vernon, Cal.,
Falls Creek at:
discharge 419
Lancha Plana dam, Cal.,
Mokelumne River below:
discharge 421
Land subdivision, influence of irrigation on.. 7
Lathrop, Cal.,
San Joaquin River near:
discharge 410
Laton, Cal.,
canals at and near:
discharge 416
Laurel Creek—
above Bear Creek junction:
discharge 416
Lava bridge, Cal.,
Whitney Creek at:
discharge 412
Lemoore road, Cal.,
canals at:
discharge 416
Lewis Creek—
(near) mouth:
discharge 416
Lewis Creek mouth, Cal.,
Kings River above:
discharge 416
Licking Fork—
(near) Railroad Flat, Cal.:
description 391–392
discharge 392
discharge, daily 392
discharge, monthly 393
gage heights 392
Lightning Creek—
(near) mouth:
discharge 416
Lippincott, J. B., work of 9–10
Little Jackass Creek—
(near) mouth, Cal.:
discharge 410
Little Kern River—
(at and near) mouth:
discharge 411
(near) Shotgun Creek mouth, Cal.:
discharge 411
Little Kern River mouth, Cal.,
Kern River above:
discharge 411
Live Oak suspension bridge, Cal.,
Cosumnes River at:
discharge per square mile 37–39
Livingston, Cal.,
Merced River at and near:
discharge 417
Lodi, Cal.,
Mokelumne River at:
description 384–385
Lodi, Cal.—Continued. Page.
Mokelumne River at—Continued.
discharge 385
gage heights 385–387
Lone Star mill, Cal.,
Mokelumne River at:
description 373
discharge monthly 373–374
discharge per square mile 37–39

M.

McCreary-Shuteye trail, Cal.,
Jackass Creek at:
discharge 410
McFarland's Bridge, Cal.,
Tule River near:
discharge 413–414
McGlashan, H. D., work of 10
Map of northern California 10
Marble Fork—
(near) Middle Fork junction:
discharge 415
(at) Sequoia Park:
discharge 415
Marble Fork mouth, Cal.,
Middle Fork of Kaweah River near:
discharge 415
Mariposa Creek—
(at) foothills, Cal.:
description 213
discharge, monthly 214–215
discharge per square mile 37–39
Martin, W. F., work of 10
Mendota, Cal.,
San Joaquin River at:
discharge 410
Merced Falls, Cal.,
Merced River at:
description 235
discharge, monthly 235–236
discharge per square mile 37–93
Merced River near:
description 222
discharge 223, 417
discharge, daily 231–232
discharge, monthly 232–235
gage heights 224–229
rating table 229–230
Merced River, basin of, miscellaneous measurements 417–418
description 25
Merced River—
(above) Crocker-Hoffman canal:
discharge 417
(at) Horseshoe Bend:
discharge 417
(near) Hillouette Creek mouth:
discharge 417
(at and near) Livingston, Cal.:
discharge 417
(at) Merced Falls, Cal.:
description 235
discharge, monthly 235–236
discharge per square mile 37–39
(near) Merced Falls, Cal.:
description 222
discharge 223, 417
discharge, daily 231–232
discharge, monthly 232–235

Merced River—Continued. Page.
(near) Merced Falls, Cal.—Continued.
gage heights 224–229
rating table 229–230
(at) Nameless Mining Co.'s dam:
discharge 417
(near) Newman, Cal.:
description 237
discharge 237
gage heights 237
(at) Yosemite, Cal.:
description 217
discharge 218, 417
discharge, monthly 221–222
gage heights 218–220
rating table 221
(in) Yosemite Valley, Cal.:
discharge 417
Merced River (South Fork)—
(near) Big Creek mouth, Cal.:
discharge 417
(at) Wawona, Cal.:
description 247
discharge 247, 417
gage heights 248
(near) Wawona, Cal.:
discharge 417
Merced River canals, miscellaneous measurements on 417–418
Miami Mill. *See* Sugar Pine.
Michigan Bar, Cal.,
Cosumnes River at:
description 396
discharge 396
discharge, daily 399–401
discharge, monthly 402
gage heights 397–399
rating table 399
Cosumnes River below:
description 403
discharge, monthly 403–404
Mill Creek (of Kings River)—
discharge 416
Mill Creek (of Stanislaus River)—
discharge 420
Miller Bridge, Cal.,
Middle Fork of San Joaquin River above:
discharge 410
Mineral King, Cal.,
East Fork of Kaweah River at:
discharge 415
Miner's inch, definition of 28
Mingret Creek—
(near) Devil Post Pile, Cal.:
discharge 410
Miscellaneous measurements in—
Calaveras River basin 421
Cosumnes River basin 421
Kaweah River basin 414–415
Kern River basin 411–413
Kings River basin 415–417
Merced River basin 417–418
Mokelumne River basin 421
San Joaquin River basin 409–410
Stanislaus River basin 420
Tulare Lake basin 413
Tule River basin 413–414
Tuolumne River basin 418–420
Modesto, Cal. (State Eng. Dept. station), Page.
Tuolumne River at:
description 297–298
discharge 418
discharge, monthly 298–299
discharge per square mile 37–39
Modesto, Cal. (U. S. Geol. Survey station),
Mokelumne River at:
description 299
discharge 300
discharge, monthly 304
gage heights 300–303
Modesto canal—
(near) Lagrange, Cal.:
description 270–271
discharge 271
discharge, daily 277–279
discharge, monthly 279–280
gage heights 271–276
rating table 276–277
Mokelumne Hill, Cal.,
Mokelumne River at:
discharge 421
Mokelumne River, basin of, miscellaneous measurements 421
description 27
Mokelumne River—
(at) Clements, Cal.:
discharge 421
(near) Clements, Cal.:
description 374–375
discharge 375
discharge, daily 381–382
discharge, monthly 383–384
gage heights 376–379
rating table 380
(at) Electra, Cal.:
description 369
discharge 370, 421
discharge, monthly 372
gage heights 370–371
rating table 371–372
(at) Lodi, Cal.:
description 384–385
discharge 385
gage heights 385–387
(at) Lone Star mill, Cal.:
description 373
discharge, monthly 373–374
discharge per square mile 37–39
(at) Mokelumne Hill, Cal.:
discharge 421
(below) Lancha Plana dam:
discharge 421
(at) Woodbridge, Cal.:
discharge 421
Mokelumne River (Licking Fork). *See* Licking Fork.
Mokelumne River (Middle Fork)—
(at) West Point, Cal.:
description 388
discharge 388
discharge, daily 389
discharge, monthly 389
gage heights 388
(near) West Point, Cal.:
discharge 421

Mokelumne River (North Fork)— Page.
(near) West Point Lake:
discharge 421
Mokelumne River (South Fork)—
(near) Glencoe, Cal.:
discharge 421
(near) Railroad Flat, Cal.:
description 389–390
discharge 390, 421
discharge, daily 391
discharge, monthly 391
gage heights 390
Mokelumne River canals, miscellaneous measurements on 421
Monache Meadows, Cal.:
Kern River at:
discharge 411
Mono Creek at—
Mono trail, Cal.:
discharge 410
Mono trail, Cal.,
Mono Creek at:
discharge 410
South Fork of San Joaquin River at:
discharge 410
Mount Whitney power plant, Cal.,
flume near:
discharge 415
East Fork of Kaweah River near:
discharge 414
Middle Fork of Kaweah River near:
discharge 415
Mugler Creek—
(below) Mugler Meadow, Cal.:
discharge 410
Municipal supplies, conveyance of 7

N.

Nameless Mining Co.'s dam, Cal.,
Merced River at:
discharge 417
Needles Peak, Cal.,
North Needles Creek at:
discharge 412
South Needles Creek at:
discharge 412
Nelder Creek—
(near) Fresno Flats, Cal.:
description 209
discharge 209
gage heights 210
Newman, Cal.,
Merced River near:
description 237
discharge 237
gage heights 237
San Joaquin River near:
description 66
discharge 66
gage heights 67
Niagara Creek—
discharge 420
Niagara Creek mouth, Cal.,
Middle Fork of Stanislaus River near:
discharge 420
North Fork, Cal., Page.
Cascadel Creek near:
description 203
discharge, daily 203–204
discharge, monthly 204–205
Crane Valley reservoir near:
description 199
discharge, daily 200
discharge, monthly 201
San Joaquin River near:
description 42
discharge, daily 42–43
discharge, monthly 44
South Fork ditch near:
description 198
discharge, daily 198–199
discharge, monthly 199
North Fork of San Joaquin River near:
description 194
discharge, daily 194–195
discharge, monthly 195–196
South Fork Creek near:
description 196
discharge, daily 197
discharge, monthly 198
Whisky Creek near:
description 201
discharge, daily 202
discharge, monthly 203
North Needles Creek—
(at) Needles Peak, Cal.:
discharge 412

O.

Oakdale, Cal.,
Stanislaus River at:
description 341, 343
discharge 344, 420
discharge, monthly 342–343, 348–349
discharge per square mile 37–39
gage heights 344–347
rating table 347–348
Ockenden, Cal.,
Dinkey Creek near:
description 186
discharge 187
discharge, daily 187–188
discharge, monthly 188
gage heights 187
North Fork of Kings River near:
discharge 416
Rush Creek near:
description 191
discharge 191
gage heights 191
Onemile Creek—
(below) Kern Lake, Cal.:
discharge 412
Onyx, Cal.,
South Fork of Kern River near:
description 98
discharge 98
gage heights 98–99

P.

Page.

Park, Cal.,
Sly Park Creek at:
description 408–409
discharge, daily 409
discharge, monthly 409
Parrots Ferry, Cal.,
Stanislaus River at:
discharge 420
Pastoria Creek—
(at) canyon mouth:
discharge 412
Pioneer canal mouth, Cal.,
Tule River near:
discharge 413
Pitman Creek—
(below) Tamarack Creek, Cal.:
discharge 410
Piute Creek—
(in) Pleasant Valley, Cal.:
discharge 419
Pleasant Valley, Cal.,
North Fork of Cosumnes River near:
description 404–405
discharge, daily 405
discharge, monthly 406
Piute Creek in:
discharge 419
Portersville, Cal.,
canals near:
discharge 414
Tule River at:
description 122
discharge, monthly 123–124
discharge per square mile 37–39
Tule River near:
description 124
discharge 125, 413
discharge, daily 132–133
discharge, monthly 134–136
gage heights 125–130
rating table 131
Posey Creek—
discharge 413
Poso Creek—
(at) foothills, Cal.:
description 111
discharge, monthly 111–112
discharge per square mile 37–39
Power, development of, water for 7
Precipitation, character of 18
Price current meters, view of 28
Publications, list of 8

R.

Railroad Flat, Cal.,
Licking Fork near:
description 391–392
discharge 392
discharge, daily 392
discharge, monthly 393
gage heights 392
Railroad Flat, Cal.,
South Fork of Mokelumne River near:
description 389–390
discharge 390, 421
discharge, daily 391
Railroad Flat, Cal.—Continued.
South Fork of Mokelumne River near—Continued.
discharge, monthly 391
gage heights 390
Rancheria Creek (of Kings River)—
discharge 416
Rancheria Creek (North Fork) (of Kings River—
(near) mouth:
discharge 416
Rancheria Creek (of Tule River)—
(near) Daunt, Cal.:
discharge 414
Rancheria Creek (of Tuolumne River)—
(near) mouth:
discharge 419
Rancheria Creek mouth, Cal.,
Tuolumne River near:
discharge 418
Rating tables, preparation and use of 28, 30
Raymond, Cal.,
canal near:
discharge 410
Red Mountain, Cal.,
Kings River near:
cable station, view 156
Reds Creek—
(above) mouth, Cal.:
discharge 410
Redwood Creek. *See* Nelder Creek.
Reed Creek—
(at) Rosaco ranch, Cal.:
discharge 419
Reedly, Cal.,
Kings River near:
discharge 415
Ribbon Falls Creek—
discharge 418
Rio Bravo ranch, Cal.,
Kern River at:
description 83
discharge 411
discharge, monthly 84–85
discharge per square mile 37–39
Roaring Creek—
discharge 416
Roaring River, falls on, view of 157
Robinsons Ferry, Cal.,
Stanislaus River at:
discharge 420
Rosaco ranch, Cal.,
Reed Creek at:
discharge 419
Rose Creek—
(near) Jupiter, Cal.,
description 354
discharge 354
gage heights 354–355
Rose Station, Cal.,
Grapevine Creek near:
discharge 412
Run-off, definition of 28–29
Rush Creek—
(near) Ockenden, Cal.:
description 191
discharge 191
gage heights 191

S.

Salmon Creek— Page.
(at) Horse Meadows, Cal.:
discharge... 412
(at) mouth:
discharge... 412
Salmon Creek mouth, Cal.,
Kern River above:
discharge... 411
Salt Creek—
(in) Kern County, Cal.:
description... 110
discharge, monthly... 111
Sand Bar Flat near Avery, Cal.,
Middle Fork of Stanislaus River at:
description... 349
discharge, daily... 350–352
discharge, monthly... 353
Sand Meadows, Cal.,
South Fork of Kaweah River at:
discharge... 415
Sanger, Cal.—
Kings River near:
description... 157–158
discharge... 158–159
discharge, daily... 170–171
discharge, monthly... 172–175
gage heights... 159–167
rating table... 167–169
San Joaquin basin, geography of... 10–12
geology of... 12–16
soils of... 16–17
surface of, origin of... 15–16
San Joaquin canals and flumes:
discharge... 410
San Joaquin Electric Co.'s powerhouse, Cal.—
canal near:
discharge... 410
San Joaquin River at:
discharge... 410
San Joaquin River, basin of, miscellaneous measurements in... 409–410
description of... 18–19
tributaries of, description of... 19–27
San Joaquin River—
(near) Friant, Cal.:
description... 44
discharge... 45, 409
discharge, daily... 48–49
discharge, monthly... 50
gage heights... 45–47
rating table... 47
(at) Hamptonville, Cal.:
description... 51
discharge, monthly... 51–52
discharge per square mile... 37–39
(at) Herndon, Cal.:
description... 53
discharge... 53–54, 409
discharge, monthly... 64–66
gage heights... 54–63
rating table... 63–64
(below) Chiquita San Joaquin, Cal.:
discharge... 410
(at) San Joaquin Electric Co.'s powerhouse, Cal.:
discharge... 410
San Joaquin River—Continued. Page.
(near) Jackson Creek, Cal.:
discharge... 410
(near) Lathrop, Cal.:
discharge... 410
(at) Mendota, Cal.:
discharge... 410
(near) Newman, Cal.:
description... 66
discharge... 66
gage heights... 67
(near) North Fork, Cal.:
description... 42
discharge, daily... 42–43
discharge, monthly... 434
San Joaquin River (Middle Fork)—
(at) Devils Post Pile, Cal.:
discharge... 410
(above) Miller Bridge, Cal.:
discharge... 410
San Joaquin River (North Fork)—
(above) mouth, Cal.:
discharge... 410
(near) North Fork, Cal.:
description... 194
discharge, daily... 194–195
discharge, monthly... 195–196
(at) Soda Spring, Cal.:
discharge... 410
San Joaquin River (South Fork)—
(at) Blaney Meadows, Cal.:
discharge... 410
(at) Mono trail, Cal.:
discharge... 410
San Joaquin Valley, relief map of... 10
Schell ditch—
(at) Knight's Ferry, Cal.:
discharge... 337
Second-foot, definition of... 28
Sequoia, Cal.,
Middle Fork of Tuolumne River at:
discharge... 418
South Fork of Tuolumne River at:
discharge... 418
Sequoia National Park, Cal.,
Marble Fork near:
discharge... 415
Middle Fork of Kaweah River in:
discharge... 415
South Fork of Kaweah River at:
discharge... 415
Shadow Creek—
(near) Shadow Lake, Cal.:
discharge... 410
Shaver, Cal.,
Big Creek near:
description... 192
discharge, daily... 192–193
discharge, monthly... 193–194
Shaver Lake, Cal.,
Stevenson Creek near:
discharge... 410
Sheep Creek—
(at) mouth:
discharge... 416

Page.

Shotgun, Cal.,
Middle Fork of Stanislaus River near:
discharge ... 420
Shotgun Creek mouth, Cal.,
Little Kern River near:
discharge ... 411
Simpson Meadows, Cal.,
Middle Fork of Kings River at:
discharge ... 415
Slide Creek near:
discharge ... 416
Slate Point, Cal.,
Kings River at and near:
description ... 175–176
discharge ... 415
discharge, monthly ... 176–177
discharge per square mile ... 37–39
Slide Creek—
(near) Simpson Meadows, Cal.:
discharge ... 416
Sly Park Creek—
(at) Park, Cal.:
description ... 408–409
discharge, daily ... 409
discharge, monthly ... 409
Small Creek—
(above) mouth, Cal.:
discharge ... 410
Soda Creek—
(near) Devil Post Pile, Cal.:
discharge ... 410
(near) mouth:
discharge ... 412
Soda Spring, Cal.,
North Fork of San Joaquin River at:
discharge ... 410
Soil maps, character of ... 17
Soils, origin of ... 15–16
South Fork Creek—
(near) North Fork, Cal.:
description ... 196
discharge, daily ... 197
discharge, monthly ... 198
South Fork ditch—
(near) North Fork, Cal.:
description ... 198
discharge, daily ... 198–199
discharge, monthly ... 199
South Fork of Willow Creek. *See* South Fork Creek.
South Needles Creek—
(at) Needles Peak, Cal.:
discharge ... 412
Springville, Cal.,
Bear Creek near:
description ... 136
discharge ... 136
gage heights ... 137
Middle Fork of Tule River above:
discharge ... 414
Stafford's ranch, Cal.,
canal near:
discharge ... 411
Stanislaus & San Joaquin Water Co.'s canal—
(near) Knights Ferry, Cal.:
description ... 328
Stanislaus & San Joaquin Water Co.'s canal—Continued.
(near) Knights Ferry, Cal.—Continued.
discharge ... 328, 420
discharge, daily ... 333–335
discharge, monthly ... 335–337
gage heights ... 329–332
rating table ... 333
Stanislaus River, basin of, miscellaneous measurements ... 420
description ... 26
Stanislaus River—
(at) Abbots Ferry, Cal.:
discharge ... 420
(below) Colliers, Cal.:
discharge ... 420
(at) Knights Ferry, Cal.:
description ... 318
discharge ... 319, 420
discharge, daily ... 325–327
discharge, monthly ... 339
gage heights ... 320–324
rating table ... 324–325
(below) North Fork mouth, Cal.:
discharge ... 420
(at) Oakdale, Cal.:
description ... 341, 343
discharge ... 344, 420
discharge, monthly ... 342–343, 348–349
discharge per square mile ... 37–39
gage heights ... 344–347
rating table ... 347–348
(at) Parrots Ferry, Cal.:
discharge ... 420
(at) Robinsons Ferry, Cal.:
discharge ... 420
Stanislaus River (Clarks Fork). *See* Clarks Fork.
Stanislaus River (Middle Fork)—
(near) Clarks Fork mouth:
discharge ... 420
(near) mouth:
discharge ... 420
(near) Niagara Creek mouth:
discharge ... 420
(at) Sand Bar Flat, Cal.:
description ... 349
discharge, daily ... 350–352
discharge, monthly ... 353
(near) Shotgun, Cal.:
discharge ... 420
Stanislaus River (North Fork)—
(near) bridges:
discharge ... 420
Stanislaus River (South Fork)—
(near) Columbia, Cal.:
description ... 358
discharge ... 358
gage heights ... 359
(near) Confidence, Cal.:
description ... 357
discharge ... 357, 420
gage heights ... 357–358
(at) Strawberry, Cal.:
discharge ... 420
(at) Sugar Pine, Cal.:
discharge ... 420

Page.
Stanislaus River canals, measurements on... 420
Stanislaus River, Stanislaus & San Joaquin Water Co.'s canal, and Schell ditch—
(at) Knights Ferry, Cal.:
discharge, daily..... 338–339
discharge, monthly..... 339–341
Stevenson Creek—
(near) Shaver Lake, Cal.:
discharge..... 410
Stony Creek—
(at) North Fork of Kaweah River trail:
discharge..... 415
Strawberry, Cal.:
South Fork of Stanislaus River at:
discharge..... 420
Stream-flow data, importance of..... 7
progress in accumulation of..... 7–8
publications on..... 8
Stream gaging, progress of..... 9–10
Structure of valley surface, origin of..... 15–16
Success, Cal.:
South Fork of Tule River near:
description..... 138
discharge..... 138
gage heights..... 138–139
Sugar Pine, Cal.,
North Fork of Fresno River near:
description..... 211
discharge..... 211
gage heights..... 211
South Fork of Stanislaus River at:
discharge..... 420
Summerdale, Cal.,
Big Creek at:
discharge..... 417
Suspension Bridge, Cal.,
Kings River at:
description..... 156–157
discharge..... 157
gage heights..... 157
Sutter Creek—
(near) Volcano, Cal.:
discharge..... 421

T.

Tamarack Creek, mouth, Cal.,
Pitman Creek near:
discharge..... 410
Tejon Creek—
discharge..... 412
Tehipite, Cal.,
Middle Fork of Kings River at:
discharge..... 415
Tejon House Creek—
(at) Tejon ranch house, Cal.:
description..... 109
discharge..... 109
discharge, monthly..... 110
Tenaya Creek—
(near) Yosemite, Cal.:
description..... 237–238
discharge..... 238, 418
discharge, daily..... 242
discharge, monthly..... 242–243
gage heights..... 238–241
rating table..... 241
Tenmile Creek— Page.
(near) mouth:
discharge..... 416
Tenmile Creek mouth, Cal.:
Kings River below:
discharge..... 415
Terms used, definitions of..... 28–29
Three Rivers, Cal.,
canal near:
discharge..... 415
Kaweah River near:
description..... 141–142
discharge..... 142–143
discharge, daily..... 149–150
discharge, monthly..... 151–152
gage heights..... 143–147
rating table..... 148
Middle Fork of Kaweah River above:
discharge..... 415
South Fork of Kaweah River near:
description..... 154
discharge..... 155, 415
discharge, daily..... 155–156
discharge, monthly..... 156
gage heights..... 155
Tibbets Creek—
(near) mouth:
discharge..... 412
Tiltill Creek—
(at and near) mouth:
discharge..... 419
Tiltill road, Cal.,
Falls Creek at:
discharge..... 419
Tobias Creek—
(near) mouth:
discharge..... 412
Tollhouse, Cal.,
Big Creek near:
description..... 188
discharge..... 188
discharge, daily..... 189–190
discharge, monthly..... 190
gage heights..... 189
Trimmer Spring bridge, Cal.:
canals at:
discharge..... 416
Tulare Lake, basin of, miscellaneous measurements..... 413
basin of. *See also* Kern and Tulare Lake basins.
description..... 20–21, 67
gage heights..... 67–70
Tulare Lake—
canal at:
discharge..... 414
Tule River, basin of, miscellaneous measurements..... 413–414
description..... 23
Tule River—
(at) McFarlands Bridge, Cal.:
discharge..... 413–414
(below) Pioneer canal:
discharge..... 413
(at) Portersville, Cal.:
description..... 122
discharge, monthly..... 123–124
discharge per square mile..... 37–39

Tule River—Continued. Page.
(near) Portersville, Cal.:
description 124
discharge 125, 413
discharge, daily 132–133
discharge, monthly 134–136
gage heights 125–130
rating table 131
Tule River (Middle Fork)—
(above) Springville, Cal.:
discharge 414
Tule River (Middle Fork), North Fork of—
(near) Doyle's ditch:
discharge 414
(near) South Fork junction:
discharge 414
Tule River (Middle Fork), South Fork of—
(at and near) mouth:
discharge 414
(at) Nelsons-Indian reservation trail:
discharge 414
Tule River (North Fork)—
(near) Middle Fork junction:
discharge 414
Tule River (South Fork)—
(near) Indian agency:
discharge 414
(near) Success, Cal.:
description 138
discharge 138
gage heights 138–139
(near) Tule River junction:
discharge 414
(near) Wheaton's ranch:
discharge 414
Tule River canals, miscellaneous measurements on 414
Tunis Creek—
discharge 412
Tuolumne, Cal.,
Clavey River near:
description 312
discharge 312, 419
gage heights 313
Hunter Creek near:
description 316
discharge 316
gage heights 317
Indian Creek near:
description 314
discharge 314
gage heights 314
Jawbone Creek near:
description 307
discharge 307
gage heights 308
North Fork of Tuolumne River near:
description 315
discharge 315
gage heights 315–316
Tuolumne Meadows, Cal.,
Tuolumne River at:
dam site at, view 250
discharge 418
Tuolumne River, basin of, miscellaneous measurements 418–420
description 25–26
Tuolumne River— Page.
(in) Hetch Hetchy Valley, Cal.:
discharge 418
(at) Hetch-Hetchy Valley dam site, Cal.:
description 249
discharge 249 418
discharge, monthly 250
gage heights 250
(at) Jacksonville:
discharge 418
(at) Lagrange, Cal.:
dam at, view 250
description 250–251
discharge 251–252
discharge, daily 264–266
discharge, monthly 267–270
gage heights 252–261
rating table 261–264
(at) Modesto, Cal. (State Eng. Dept. station):
description 297–298
discharge 418
discharge, monthly 298–299
discharge per square mile 37–39
(at) Modesto, Cal. (U. S. Geol. Survey station):
description 299
discharge 300
discharge, monthly 304
gage heights 300–303
(near) Rancheria Creek mouth:
discharge 418
(near) South Fork mouth, Cal.:
discharge 418
(at) Tuolumne Meadows, Cal.:
dam site, view 250
discharge 418
(at) Wards Ferry, Cal.:
discharge 418
Tuolumne River (Middle Fork)—
(near) bridge:
discharge 418
(near) Sequoia, Cal.:
discharge 418
Tuolumne River (North Fork)—
(above) Basin Slope Creek mouth:
discharge 418
(at) Goldwin Mining Co.'s canal:
discharge 418
(near) Tuolumne, Cal.:
description 315
discharge 315
gage heights 315–316
Tuolumne River (South Fork)—
(near) Groveland, Cal.:
description 310
discharge 315
gage heights 310–316
(near) mouth:
discharge 418
(near) Sequoia, Cal.:
discharge 418
Tuolumne River canals, miscellaneous measurements on 418–419
Turlock canal—
(near) Lagrange, Cal.:
description 281
discharge 281–282

Turlock canal—Continued. Page.
(near) Lagrange, Cal.—Continued.
discharge, daily ... 289–292
discharge, monthly ... 292–293
gage heights ... 282–287
rating table ... 287–289
Twomile Creek—
(at) mouth:
discharge ... 419
Twomile Creek mouth, Cal.,
Clavey River near:
discharge ... 419
Tyler Creek—
(near) Hot Springs, Cal.:
description ... 121
discharge ... 121
gage heights ... 121–122

V.

Valley fill, origin of ... 15–16
Visalia, Cal.,
South Fork of Kaweah River near:
discharge ... 415
Volcano, Cal.,
Sutter Creek near:
discharge ... 421

W.

Wachumna Hill, Cal.,
Kaweah River at:
description ... 139–140
discharge, monthly ... 140–141
discharge per square mile ... 37–39
Wade Creek—
(at) Dry Meadows, Cal.:
discharge ... 412
Wading, measurement by, view of ... 28
Wards Ferry, Cal.,
Tuolumne River at:
discharge ... 418
Waters, ground, character of ... 14
Wawona, Cal.,
Big Creek near:
description ... 248–249
discharge ... 249, 417
gage heights ... 249
South Fork of Merced River at:
description ... 247
discharge ... 247, 417
gage heights ... 248
South Fork of Merced River near:
discharge ... 417
Weldon road, Cal.,
canal near:
discharge ... 411
South Fork of Kern River at:
discharge ... 411
West Point, Cal.,
canal near:
discharge ... 421
Middle Fork of Mokelumne River at:
description ... 388
discharge ... 388
discharge, daily ... 389
discharge, monthly ... 389
gage heights ... 388
West Point, Cal.—Continued. Page.
Middle Fork of Mokelumne River near:
discharge ... 421
North Fork of Mokelumne River near:
discharge ... 421
Wheaton's ranch, Cal.,
South Fork of Tule River near:
discharge ... 414
Wheatville,
canal near:
discharge ... 416
Whisky Creek—
(near) North Fork, Cal.:
description ... 201
discharge, daily ... 202
discharge, monthly ... 203
White River—
(at) foothills, Cal.:
description ... 113
discharge, monthly ... 113–114
discharge per square mile ... 37–39
(near) Hot Springs, Cal.:
description ... 114
discharge ... 115
gage heights ... 115–116
(at) White River, Cal.:
discharge ... 413
Whitney Creek—
discharge ... 412
(at) Lava bridge:
discharge ... 412
Willow Creek (North Fork)—
(above) reservoir dam:
discharge ... 410
Woodbridge, Cal.,
Mokelumne River at:
discharge ... 421
Woods Creek—
(at) Jacksonville, Cal.:
discharge ... 419

Y.

Yosemite, Cal.,
Merced River at:
description ... 217
discharge ... 218
discharge, monthly ... 221–222
gage heights ... 218–220
rating table ... 221
Tenaya Creek near:
description ... 237–238
discharge ... 238, 418
discharge, daily ... 242
discharge, monthly ... 242–243
gage heights ... 238–241
rating table ... 241
Yosemite Creek at:
description ... 243
discharge ... 243, 417, 418
discharge, monthly ... 247
gage heights ... 244–246
rating table ... 246
Yosemite Valley, Cal.,
Merced River in:
discharge ... 417
Bridal Veil Creek in:
discharge ... 417